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CK-12 Earth Science For Middle School Quizzes and Tests



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Dana Desonie

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CHAPTER

1

MS What is Earth Science? Assessments

Chapter Outline

- 1.1 THE NATURE OF SCIENCE
 - 1.2 EARTH SCIENCE AND ITS BRANCHES
 - 1.3 WHAT IS EARTH SCIENCE?
-

1.1 The Nature of Science

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Why do scientists call the “Big Bang” a theory?
 - a. It is probably unlikely and therefore not a fact.
 - b. A very well respected scientist proved it to be true.
 - c. Many scientists have agreed upon this explanation after repeated experiments and models have shown it to be accurate.
 - d. All possible answers to a scientific idea are called theories.
2. Which of the following is not a scientific model?
 - a. A cross section of an apple that mimics the layers of the Earth.
 - b. A chart with nutritional information about food we eat.
 - c. A computer simulation that can show what will happen to algae in a pond over 10 years given conditions such as rain, sunlight, animal populations and temperature.
 - d. An explanation for the extinction of the dinosaurs that takes into account volcanic activity, climate, space activity and rock samples.
3. Which of the following are good measures to follow when working in the field?
 - a. Bring sun protection and sufficient water.
 - b. Do not travel without someone who knows the area.
 - c. Bring first aid supplies.
 - d. More than one answer is correct.
4. A scientist is conducting an experiment to determine which of three building structure types will best withstand the force of an earthquake. Which of the following is most likely to be the “dependent variable”?
 - a. The amount of damage each building receives.
 - b. The magnitude of the earthquake.
 - c. The structure of the building.
 - d. The type of soil each building is sitting on
5. Conclusions in an experiment
 - a. Improve with greater and more accurate data..
 - b. Often lead a researcher to new scientific questions
 - c. Can agree or disagree with the hypothesis.
 - d. All of the above.

True or False

Write true if the statement is true or false if the statement is false.

_____ 6. The scientific method is used to answer any question that one can think of.

- _____ 7. Scientific models are an organized step-by-step process to answer a question in science.
- _____ 8. The dependent variable in an experiment is directly influenced by the independent variable.
- _____ 9. Even if there is information we don't know, a model can be used to explain an event.
- _____ 10. A theory will still remain even if conflicting data is discovered.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A chart or a graph can be used to show the _____ of an experiment.
12. After creating a hypothesis, the next step in the process is the _____.
13. A _____ model shows a representation of something using objects.
14. An important part of the scientific process wherein scientists examine each other's research to see if there are mistakes is called _____.
15. It is very important to have only one _____ in an experiment, and also to have many _____.

Short Answer

Answer each question in the space provided.

16. Describe the 3 types of scientific models explained and give an example of each.

17. Write up a mock experiment for testing a question science can answer. Include the terms control, independent variable and dependent variable correctly in your explanation.

1.2 Earth Science and its Branches

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which of the following is not an area of geology
 - Cartography
 - Paleontology
 - Volcanology
 - Seismology
- Which is true about Oceanography
 - It is the most established of the Earth Sciences
 - It began as a study of tides
 - Most of the ocean has already been explored
 - None of the above.
- Geology is the study of
 - The solid matter of Earth
 - Space rocks like meteors or comets
 - Climate
 - Environmental Factors
- An oceanographer might study all of the following except for
 - Chemistry of seawater
 - Underwater ocean features such as volcanoes or vents
 - Rainfall patterns during a hurricane
 - Water movement
- Which of the following statements is true about Climatology and Meteorology
 - Climatologists might work on tomorrow's weather forecast for the local news.
 - Meteorologists might create a computer model to predict global warming patterns
 - Both areas focus on the Earth's atmosphere and its patterns
 - Climatologists are interested in tornadoes

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Geologists only study rocks on Earth.
- _____ 7. Over 70% of Earth is covered with water.
- _____ 8. Two things that a geologist might use to do her work are radars and satellites.

_____ 9. Environmental Scientists work closely with Earth Scientists to help preserve Earth.

_____ 10. Astronomers have few scientific questions left unanswered.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Geology is the study of the _____ Earth.

12. A scientist who studies molten lava is called a _____.

13. _____ use both optical and radio telescopes to view faraway objects.

14. Meteorologists use tools to forecast the _____.

15. The “last frontier” on planet Earth according to many is the _____.

Short Answer

Answer each question in the space provided.

16. What are five important functions of Earth Scientists?

17. A scientist discovers new marine life on the bottom of the ocean near a volcanic vent. What different types of Earth Scientists specialists might be brought in to help research this area? Explain what each might do.

1.3 What is Earth Science?

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which step of the scientific method comes after asking the question?
 - Hypothesis
 - Experiment
 - Research
 - Conclusion
- Which of the following is NOT a safety measure to take when working outside the laboratory?
 - Bring sufficient food and water
 - Know how to use the eye wash station
 - Let others know what you are doing, where you will be, and when you will be returning
 - Wear long pants and use sun protection
- Which of the following would a physical model be used to show
 - Global warming predictions
 - The chemical reaction between sodium and water
 - How our Moon was created from Earth
 - Where the tectonic plates on Earth are located
- A scientific theory is a
 - Hypothesis that is repeatedly shown to be true.
 - The same as a hypothesis
 - Is disproved if conflicting data is discovered
 - 2 answers are correct
- Meteorology is the study of
 - Atmosphere, weather and storms
 - Climate, atmosphere and long-term climate events like global warming
 - Planets, galaxies, and stars
 - None of the above
- In an experiment, which of the following can be changed or manipulated
 - control
 - independent variable
 - dependent variable
 - dependent control
- What does a conceptual or ideas model provide
 - a physical representation of what is being studied

- b. a drawing of the different parts of a system
 - c. a mental explanation that ties together data
 - d. an equation that ties together data
8. A scientific investigation begins with
- a. the asking of a question
 - b. the formation of a hypothesis
 - c. the gathering of data
 - d. the investigation of current research or ideas already known about the subject
9. An important feature of a hypothesis is that it is
- a. In the form of a question
 - b. testable
 - c. right the first time
 - d. the only possible solution
10. Tornadoes might be studied by
- a. geologists
 - b. astronomers
 - c. physical oceanographers
 - d. meteorologists

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. The scientific method is a set of logical steps used to help create scientific theories.
- _____ 12. Earth Scientists do not often work with scientists in other fields.
- _____ 13. Scientific models offer perfect explanations for ideas for which we have all the information.
- _____ 14. Earth Scientists only study things that occur on our planet.
- _____ 15. Seismology and Volcanology are all fields within the study of geology.
- _____ 16. One of the things that a meteorologist studies are meteors.
- _____ 17. Of all the branches in Earth Science, oceanography is the most understood.
- _____ 18. A Model that uses numbers will often use equations or computers to show the science.
- _____ 19. The safety symbol that warns of high voltage is a lightning bolt in a triangle.
- _____ 20. Oceanographers study the impact that humans have had on fish, water pollution and the melting of ice caps.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. _____ is the study of water movement, like waves and ocean currents.
22. “_____” means “the study of.”
23. Both _____ and _____ study the atmosphere.
24. For something to be science, it must be _____.
25. The result to an experiment is known as the _____ variable.
26. When a scientist looks up information in books and the internet, or interviews experts for information this process is known as _____.

27. It is very important to follow _____ guidelines when doing labs.
28. Most models using numbers these days are done by _____.
29. It is important to pay attention to safety _____ on chemicals or equipment showing such warning as “corrosive,” “toxic,” or “high voltage.”
30. Earth Science includes not only the solid Earth, but also the Universe, the atmosphere and _____-

Short Answer

Answer each question in the space provided.

31. Name three of the branches of Earth Science and give two specialties of each.
32. What type of physical model might a geologist use to help in her studies? Explain the model, what type of model it is and how it would be useful.
33. Create two hypotheses that might be used for the question, “Which types of rocks erode most quickly?” Be sure each meets the requirements of a hypothesis.

CHAPTER **2**

MS Studying Earth's Surface Assessments

Chapter Outline

- 2.1 INTRODUCTION TO EARTH'S SURFACE**
 - 2.2 MODELING EARTH'S SURFACE**
 - 2.3 TOPOGRAPHIC MAPS**
 - 2.4 USING SATELLITES AND COMPUTERS**
 - 2.5 STUDYING EARTH'S SURFACE**
-

2.1 Introduction to Earth's Surface

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Continents
 - a. are above sea level
 - b. are older than ocean basins
 - c. both a and b
 - d. none of the above
2. Which of the following is NOT an example of a destructive force?
 - a. A volcano blowing its top off
 - b. Rivers cutting away at rocks
 - c. Rivers bringing sand to the shore to form beaches
 - d. Wind wearing down mountains to become plateaus
3. A double compass rose
 - a. shows both direction and location
 - b. is used by sailors
 - c. shows the difference between true north and magnetic north
 - d. both b and c are correct
4. The terrain of an area, or the difference between high and low points in an area, is known as
 - a. elevation
 - b. relief
 - c. height
 - d. landform differential
5. Constructive forces
 - a. create new land and features
 - b. build land outward
 - c. are responsible for creating mountains
 - d. all of the above

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Latitude and longitude can describe direction.
- _____ 7. Elevation describes how far above sea level an object is.
- _____ 8. Continents can be billions of years old.

_____ 9. Mid-ocean ridges are the deepest places in the ocean.

_____ 10. The ocean basin begins where the ocean meets the land.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Wind erosion is an example of a(n) _____ force

12. A compass's needle always points to _____ north.

13. The deepest place in the world is the _____.

14. Huge, connected underwater mountain ranges are called _____.

15. Location on earth is often found by using a grid system known as _____ and _____ - _____.

Short Answer

Answer each question in the space provided.

16. How can a river act as both a constructive and destructive force?

17. What is the difference between magnetic north and geographic north?

2.2 Modeling Earth's Surface

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Lines of latitude give the distance north and south of the
 - Prime Meridian
 - Equator
 - North Pole
 - South Pole
- A Mercator projection
 - is a perfect likeness of Earth
 - uses a cone to create the map
 - distorts the size of continents near the poles the most
 - distorts Mexico more than Greenland
- Which is NOT true on a map legend?
 - Blue is used to show water features
 - Purple lines show major roads
 - Black dots represent cities
 - The size of a city dots helps to show its population
- Which is NOT true of a Robinson projection?
 - It is a completely accurate map with no distortions
 - It is more oval than rectangular
 - It is more accurate in size than the Mercator
 - It was created using mathematical formulas
- Which is NOT true of the Prime Meridian?
 - It is a line of longitude
 - It runs through Greenwich, England
 - It is known as 0 degrees
 - It runs from east to west

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. All map projections have some disadvantage.
- _____ 7. Both Robinson and Mercator Projections have distortion at the poles more than at the equator.
- _____ 8. Gnomonic projections are most accurate when used for small geographic areas.

_____ 9. The Mercator Projection, unlike most other maps, represents the world with South at the top of the map.

_____ 10. A globe is the most detailed map we have of Earth.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A small scale _____ map, showing hills and streams, might be used hiking or orienteering.

12. A _____ is the most accurate way to represent Earth's curved surface.

13. The _____ projection has a great deal of size distortion past 15 degrees north and south of the equator.

14. A _____ projection places a flat piece of paper on the globe and projects an image from that point.

15. A _____ map shows types and locations of rocks in an area.

Short Answer

Answer each question in the space provided.

16. Given the advantages and disadvantages of the different map projections, tell what projection you believe would be best to show the north pole accurately. Explain why you think this is true.

17. Name three different types of maps (not projections) and tell what each shows.

2.3 Topographic Maps

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. A cross section
 - a. can show the inside of something
 - b. is a type of topographic map
 - c. cannot used with bathymetric maps
 - d. uses concentric circles to show elevations
2. Which is NOT true of a bathymetric map?
 - a. it is a type of topographic map
 - b. larger numbers show great depths
 - c. negative numbers are used to show depths below sea level
 - d. it is often made using sonar
3. Contour lines that create a V shape indicate what?
 - a. a stream channel
 - b. a hilltop
 - c. a valley
 - d. a cliff
4. Which of the following is a topographic map NOT able to do?
 - a. show the slope of an area
 - b. show the horizontal scale
 - c. give details about the land use in an area
 - d. determine the direction of water flow
5. If elevation between 2 bold lines is 1000 feet, and there are 5 lines in between the bold lines, what is the contour interval?
 - a. 5
 - b. 200
 - c. 500
 - d. 2000

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The difference between two contour lines is the contour interval.
- _____ 7. Contour lines help us to see the three-dimensional shape of the land.
- _____ 8. Concentric lines that are very far apart show a high, steep hill.

_____ 9. The hatch marks on a topographic map are drawn on the side of the circle with the higher elevation.

_____ 10. While topographic maps can show vertical distances, they cannot show horizontal distances.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The spacing between contour lines shows the _____ of the land.

12. One important rule of a topographic map is that contour lines may never _____.

13. Water depths are shown on a _____ map.

14. Faults and complicated regions of exposed rocks can be shown using a _____ map.

15. A stream valley on a topographic map is shown with _____ portions of contour lines.

Short Answer

Answer each question in the space provided.

16. Explain three benefits of topographic maps, including the people that would find them useful.

17. Describe the look of a topographic map that has a steep hill on the north side, a stream valley in the middle, and a gentle hill on the east side with a depression on the top. What features would it have?

2.4 Using Satellites and Computers

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which best describes a geostationary orbit?
 - A satellite orbit that can “see” the entire Earth in about 24 hours
 - A satellite orbit that is used to accurately pinpoint a location using radio signals
 - A satellite that stays above one location
 - A satellite orbit that is very high above the Earth and collect data on a single geographic point on the Earth
- Scientific satellites can be used
 - by NOAA, NASA and USGS
 - to detect things such as the ocean levels
 - to carry instruments that allow for measurements such as temperatures or atmospheric gas levels
 - all of the above
- Which of the following is not true of GPS?
 - it stands for Global Positioning System
 - it was first used by the U.S. military, but is now available to the general public
 - it makes use of travel times of infrared waves in order to know distances
 - it relies on both a GPS receiver at the point of interest and satellites
- In which way can a satellite be used to help with safety?
 - satellites can better predict weather to warn people of severe storms or hurricanes
 - satellites keep people from getting lost when they use GPS
 - satellites can communicate important information to television stations to warn of a dangerous situation
 - all of the above
- Computer maps
 - are often able to display more information than traditional maps
 - cannot put multiple pieces of satellite data together
 - are not more accurate, but are often more visually pleasing
 - all of the above

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. A polar orbit is a shorter orbit than a geostationary orbit.
- _____ 7. GPS can only be done with a minimum of 4 satellites.
- _____ 8. GIS stands for Geostationary Information System.

_____ 9. Computers increase the accuracy of maps made from satellite images and satellite data.

_____ 10. The higher above Earth that a satellite orbits the smaller the view it is able to see.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The first group to use GPS was the _____.

12. In order to communicate with satellites using the Global Position System, the user on Earth must have a _____.

13. A type of mapping called _____ is able to link satellite data and locations to create useful information for many people.

14. A _____ orbit can be used to monitor local weather 24 hours a day.

15. _____ launched a fleet of satellites that are now used by many other organizations.

Short Answer

Answer each question in the space provided.

16. Explain the differences and similarities of polar orbits and geostationary orbits.

17. Explain how GPS works.

2.5 Studying Earth's Surface

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- TRUE north is
 - the magnetic north pole
 - the geographic north pole
 - where a compass needle always points
 - more than one is correct
- The deepest places in the ocean are
 - Ocean trenches
 - Seamounts
 - Mid-Ocean ridges
 - Formed by constructive lava flows
- The area on a map that explains features and symbols is called a(n)
 - compass
 - scale
 - legend
 - projection
- An often triangular shaped deposit of sediment at the mouth of the river is
 - a river valley
 - a continental slope
 - a plain
 - a delta
- Which statement describes a latitude line?
 - runs from north to south
 - begins at the Prime Meridian
 - runs parallel to the Equator
 - runs vertically
- Contour intervals are
 - the elevation difference between contour lines
 - differences in horizontal distances between 2 contour lines
 - indicators of areas with gentle slopes
 - only found on large scale topographic maps
- Which of the following is NOT the correct pairing of features with explanations?
 - hills: shown by concentric circles

- b. steep slope: shown by contour lines being very close together
 - c. an area of depression: shown by hatch marks
 - d. stream valleys: shown by two crossing contour lines
8. Which is NOT true of GPS?
- a. It stands for global positioning system
 - b. it uses radio signals
 - c. it detects locations using satellite imagery
 - d. it was first used by the US military
9. Which is true of a satellite in a polar orbit?
- a. It is often used for local communications satellites
 - b. it views Earth's entire surface in less than one day
 - c. it moves in a longitudinal orbit
 - d. it is used only by NASA
10. Geologic maps
- a. use color to show rock units
 - b. can include a cross section
 - c. are a type of topographic map
 - d. all of the above

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Contour lines on a topographic map must never cross.
- _____ 12. Map projections are a way to represent Earth's curved surfaces on a two-dimensional surface.
- _____ 13. All map projections have distortions or inaccuracies.
- _____ 14. The Mercator map projection is more accurate in terms of country size than the Robinson project since the Mercator map is rounded on the edges.
- _____ 15. The Polar Coordinate System is the same thing as GPS.
- _____ 16. A topographic map is able to show elevations using contour lines.
- _____ 17. A bathymetric map uses contour lines to show air pressure on weather maps.
- _____ 18. The GIS, or Geographic Information System, is used to accurately pinpoint locations on Earth using radio signals.
- _____ 19. An example of a destructive force is lava flowing out of the ocean floor to form Hawaii.
- _____ 20. Much of the ocean floor is called the abyssal plain.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. For a sailor to know both geographic and true north, he uses a device called a _____.
22. _____ are much older than ocean basins. Some are billions of years old!
23. Weathering and erosion are types of _____ forces.
24. _____ are long, tall underwater mountain ranges.
25. Longitude and latitude is an example of a _____ system.
26. An imaginary line on Earth that runs north-south is called a line of _____.

27. A _____ is the only representation of Earth where distances and sizes are not distorted.
28. When contour lines are far apart it shows a _____ slope.
29. Concentric circles on a topographic map indicate a _____.
30. A _____ map shows the outlines and borders of states and countries.

Short Answer

Answer each question in the space provided.

31. Describe the difference between a destructive and constructive force on Earth. Then give two examples of each.

32. What does it mean if something is said to be at 30 degrees north, 50 degrees west?

33. How are a topographic map and a bathymetric map the same? How are they different?

CHAPTER **3**

MS Earth's Minerals Assessments

Chapter Outline

- 3.1 MINERALS**
 - 3.2 IDENTIFICATION OF MINERALS**
 - 3.3 FORMATION OF MINERALS**
 - 3.4 MINING AND USING MINERALS**
 - 3.5 EARTH'S MINERALS**
-

3.1 Minerals

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which of the following is the basic unit of matter?
 - molecule
 - chemical compound
 - atom
 - nucleus
- Water is an example of a(n)
 - atom
 - molecule
 - ion
 - native element
- An atom is only an ion if it has more or less
 - neutrons than electrons
 - protons than neutrons
 - neutrons than protons
 - electrons than protons
- An example of a pure element is
 - table salt
 - silicon dioxide
 - sulfur
 - calcium carbonate
- The crystal shape of a mineral
 - shows how the atoms are arranged
 - will always be the same if it is made from the same atoms
 - can usually only be seen under a microscope
 - can help account for how hard or brittle a mineral is

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. A molecule is the smallest unit of an element.
- _____ 7. Protons and electrons are found in the nucleus of an atom.
- _____ 8. Halides (salts) make up the largest group of minerals on Earth.

_____ 9. Coal and diamonds are different minerals because they have different structure.

_____ 10. In a crystal, the atoms are arranged in a pattern.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. 90% of Earth's crust is made of minerals in the group called a(n) _____.

12. The _____ makeup of a material is the different atoms and molecules that it is composed of.

13. Even though calcium carbonate is made by marine animals, it is still _____.

14. _____ is the substance of which physical objects are made.

15. Electrically neutral particles are called _____.

Short Answer

Answer each question in the space provided.

16. List and briefly describe the chemical composition of the eight groups of minerals.

17. What is a mineral?

3.2 Identification of Minerals

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. If the volume of a mineral is 6 and the mass is 3, what is its density?
 - a. 6
 - b. 3
 - c. 2
 - d. .5
2. The streak of a mineral is
 - a. the same as the color of the mineral
 - b. never the same color of the mineral
 - c. the same even when the same mineral is found in various colors
 - d. either black or white
3. Which of the following is NOT a property used to identify a mineral?
 - a. radioactivity
 - b. cleavage
 - c. reactivity
 - d. number of electrons
4. Mass is
 - a. how much space an object takes up
 - b. the amount of matter in an object
 - c. how much matter takes up a certain amount of space
 - d. the weight of an object
5. What mineral is number 1 on the Mohs Scale?
 - a. talc
 - b. diamond
 - c. topaz
 - d. calcite

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The color of a mineral is a more reliable test of its identity than its streak.
- _____ 7. An object with the density of 2 is denser than an object with the mass of 4 and the volume of 1.
- _____ 8. A crystal with six sides that are all the same size has a octahedral structure.

- _____ 9. Topaz is a harder mineral than calcite.
- _____ 10. The luster of a mineral its color under ultraviolet light.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A mineral will break where the chemical bonds are the _____.
12. When the break of a mineral is regular and has a pattern this is the mineral's _____.
13. The hardest mineral on the Mohs Scale is _____.
14. _____ is the amount of space that an object takes up.
15. Gold and silver have a _____ luster.

Short Answer

Answer each question in the space provided.

16. Describe how to find the density of a mineral, including what information you would need to know and the formula to determine the density.

17. What is cleavage and what is fracture? What are their differences and what are their similarities?

3.3 Formation of Minerals

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Water plus other substances is a(n)
 - precipitate
 - saline
 - solution
 - geode
- Hot fluids
 - flow through open spaces in rocks and deposit solid minerals
 - can hold more dissolved particles than cold fluids
 - can have chemical reactions with rocks
 - all of the above
- As the water in a solution evaporates,
 - all dissolved elements evaporate too
 - a chemical reaction occurs to help create minerals
 - it leaves behind a solid layer of minerals
 - nothing happens. Water in a solution cannot evaporate
- Underground water is heated by
 - lava
 - dissolved minerals
 - calcite
 - magma
- Melted rock that erupts on to Earth's surface is called
 - lava
 - magma
 - vein
 - melted minerals

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Seawater can hold more dissolved minerals than freshwater.
- _____ 7. Both geodes and veins are mineral deposits in rocks that form from hot solutions.
- _____ 8. As water evaporates in a solution, the minerals evaporate too.

_____ 9. Underground water that is heated creates magma.

_____ 10. Water has the ability to hold dissolved ions.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Minerals that are deposited in open spaces form crystals inside rocks called _____.

12. Magma is different from lava because magma is found _____.

13. _____ form when dissolved particles come together to form a solid in water.

14. _____ plus other substances is called a solution.

15. Salt and calcite can both easily _____ out of water.

Short Answer

Answer each question in the space provided.

16. What is the difference between magma and lava?

17. How is mineral formed from a solution?

3.4 Mining and Using Minerals

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Quartz can be found in
 - electrical wiring
 - soda cans
 - sheet rock
 - windows
- Which valuable element is found in bauxite ore?
 - aluminum
 - copper
 - corundum
 - iron
- What are techniques for finding and deciding whether to use ore?
 - examining chemical elements in the area to determine the presence of ores
 - creating a map of the geology and deposits
 - amounts of ores are calculated to determine profitability
 - all of the above
- Which is NOT true of diamonds?
 - more mined diamonds are used for gemstones than for cutting
 - diamonds often to be mined underground
 - diamonds can be used to polish other gemstones
 - diamonds are cut to maximize reflecting light
- What is NOT true of placer mining?
 - placer minerals collected in stream gravels
 - placer minerals were found in California in 1848
 - placer metals are deposited along rivers
 - placer minerals are so small they often are not valuable

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Surface mining includes strip mining, open-pit mining, and quarrying.
- _____ 7. Waste rock is used to make aluminum cans.
- _____ 8. Rubies are opaque gemstones.

_____ 9. Land reclamation is used to restore an area damaged by mining.

_____ 10. Minerals must be removed from ore to be useful.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Ores have high concentrations of _____.

12. A _____ is a type of mine that produces rocks and minerals used for buildings and roads.

13. In underground mining, _____ are dug to allow miners and materials to be moved in and out of the mines.

14. _____ is a mineral used in electrical wiring.

15. Ores will only be mined for minerals if they will be _____.

Short Answer

Answer each question in the space provided.

16. What are the steps geologists use to determine if they can mine in a certain area or not.

17. Name 4 common products made from minerals.

3.5 Earth's Minerals

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which of the following is a characteristic of a mineral?
 - solid
 - inorganic
 - naturally created
 - all of the above
- Which following pairing is incorrect?
 - a proton is positive
 - a neutron is neutral
 - an electron is negative
 - an ion is neutral
- The smallest unit of matter is a(n)
 - molecule
 - atom
 - nucleus
 - compound
- The color of a mineral's powder is its
 - luster
 - shine
 - streak
 - cleavage
- The hardness of a mineral is determine by
 - measuring both its mass and volume
 - looking at a sample of the mineral under the microscope
 - scratching it by and on a series of other minerals with known hardnesses
 - breaking the mineral and seeing the type of fracture or cleavage
- Water plus other substances is known as a(n)
 - precipitate
 - solution
 - salt
 - element
- Hot water can
 - hold more dissolved particles than cold water

- b. hold less dissolved particles than cold water
 - c. help create lava
 - d. make a lake less salty
8. What is NOT true of mining?
- a. minerals cannot be directly mined
 - b. mining can be both dangerous and polluting
 - c. mining is done primarily for metals like gold, silver and copper
 - d. mining is needed for many everyday objects
9. Restoring land mined to its natural state is called
- a. reclamation
 - b. restoration
 - c. decontamination
 - d. quarrying
10. Rocks that contain valuable minerals are called
- a. placers
 - b. gemstones
 - c. metals
 - d. ores

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Earth's crust is made mainly of silicates.
- _____ 12. All minerals are organic.
- _____ 13. A mineral has fracture if it breaks unevenly or in a non-patterned way.
- _____ 14. Color is most often the least useful tool in mineral identification.
- _____ 15. The luster of a mineral is described as either metallic or non-metallic.
- _____ 16. Magma is melted rock that erupts onto Earth.
- _____ 17. Salt and calcite can easily precipitate out of water.
- _____ 18. A vein is a mineral deposit formed only from salt water.
- _____ 19. Surface mining can include blasting rocks apart and tunnels.
- _____ 20. Gemstones are useful beyond their beauty and jewelry making.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. A _____ is the smallest unit of a chemical compound.
22. A _____ structure is one that has a regular, repeated arrangement of atoms.
23. A _____ is an inorganic, solid substance made naturally and having a definite composition.
24. The _____ of an object shows the relationship between its mass and volume.
25. If halide forms cubes as it breaks, it has a definite _____.
26. Geodes are formed as _____ form in large open spaces.
27. Elements in water can form solid _____.
28. Most ores mined are _____ resources.

29. In order to help with pollution from mining, the U.S. government has created standards to protect _____ quality.

30. When ore is mined _____ must be separated out of it to be useful.

Short Answer

Answer each question in the space provided.

31. Name four characteristics of minerals, four physical properties of minerals, and four examples of minerals.

32. Describe how a mineral can be formed from a solution.

33. Why would a company choose surface mining? Why would it choose underground mining? If both were equally viable, which would be the best choice and why?

CHAPTER

4**MS Rocks Assessments****Chapter Outline**

- 4.1 TYPES OF ROCKS**
 - 4.2 IGNEOUS ROCKS**
 - 4.3 SEDIMENTARY ROCKS**
 - 4.4 METAMORPHIC ROCKS**
 - 4.5 STUDYING ROCKS**
-

4.1 Types of Rocks

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- How many major rock types are in the rock cycle?
 - 3
 - 4
 - 5
 - 7
- Each type of rock has a particular
 - color
 - size
 - set of minerals
 - shape
- The texture of a rock is describes what feature of the mineral grains?
 - size
 - shape
 - arrangement
 - all of the above
- Two rocks have the same minerals, but of very different sizes. Which statement is true?
 - One rock has more eroded fragments than the other.
 - The minerals cooled at different rates from a magma.
 - The rocks have different compositions.
 - One rock is igneous and one rock is metamorphic.
- A rock that changes its mineral composition or texture is a(n)
 - igneous rock
 - sedimentary rock
 - metamorphic rock
 - hard rock

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. As magma cools, all of the mineral grains form at the same temperature.
- _____ 7. Metamorphism may change the chemical composition of a rock.
- _____ 8. Only one type of mineral can be present in a metamorphic rock.

_____ 9. Rocks can be studied through a microscope

_____ 10. A metamorphic rock must have a different mineral composition than its parent rock

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The natural transitions that change one rock type to another rock type are part of the _____.

12. Igneous rocks form by the cooling of a _____.

13. The two features that are used to identify rocks are _____ and _____.

14. An exposed rock formation is called a(n) _____.

15. The solids that are left behind after a liquid evaporates are called _____.

Short Answer

Answer each question in the space provided.

16. Describe the importance of the rock cycle.

17. Draw a picture of the rock cycle with the three rock types and the processes that connect them. This will be useful as a reference in the rest of this chapter.

4.2 Igneous Rocks

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which term describes igneous rocks that crystallize above the crust
 - extrusive
 - intrusive
 - magma
 - lava
- Which mineral is the most common in a dark-colored, mafic igneous rock?
 - diamond
 - quartz
 - pyroxene
 - olivine
- The color of minerals in an igneous rock is determined by
 - the composition of the magma
 - the length of time it took the magma to cool
 - whether it cooled from a lava or a magma
 - none of the above.
- An igneous rock with large crystals cooled
 - rapidly from a lava.
 - rapidly beneath the surface.
 - slowly from a magma.
 - unknown. It is not possible to tell the rate of cooling from the crystal size.
- Extrusive igneous rocks
 - are common because large mountain ranges are made entirely of basalt
 - are common because the seafloor is made up of basalt
 - are rare because not much rock melts to produce lava.
 - are rare because much more magma cools intrusively.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. A basalt looks light colored partly because its crystals are too small to see.
- _____ 7. Volcanic rock may have so many gas bubbles that it can float on water.
- _____ 8. Granite and rhyolite are high silica rocks.

_____ 9. Mountain ranges can be made mainly of igneous rocks.

_____ 10. Igneous rock is too hard to be used for art works.

Fill in the Blanks

11. Pumice has its distinctive texture because _____.

12. Mountain ranges can be made mainly of the igneous rock type _____.

13. _____ igneous rocks form underground and cool more slowly, causing large crystals to form.

14. A light-colored extrusive igneous rock is _____.

15. Lighter colored igneous minerals are higher in _____.

Short Answer

Answer each question in the space provided.

16. Describe three uses of igneous rocks.

17. What are the differences between intrusive and extrusive igneous rocks in how they appear and how they form?

4.3 Sedimentary Rocks

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What are solid particles that have been deposited on the Earth's surface called?
 - a. lava
 - b. sediments
 - c. quartz
 - d. soils
2. Which of the following has the smallest grains?
 - a. breccia
 - b. conglomerate
 - c. siltstone
 - d. sandstone
3. The processes by which sediments harden into rock include
 - a. compaction
 - b. sedimentation
 - c. dissolution
 - d. precipitation
4. Clastic sedimentary rocks are classified by
 - a. the presence or absence of fossils
 - b. how hard they are
 - c. the size of the sediments they are made of
 - d. the location where they precipitated
5. Which of the following is NOT a fossil?
 - a. dinosaur footprints
 - b. mammoth bones
 - c. ancient human hair preserved in cave sediments
 - d. a modern shell on the beach

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Like minerals, rocks cannot include organic materials.
- _____ 7. Breccia and conglomerate have large sediments that have different shapes.
- _____ 8. Coal is not a sedimentary rock.

_____ 9. Cementation occurs when the fluids in the free spaces of the sediments crystallize.

_____ 10. A rock that includes fossil fragments is a bioclastic rocks.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. _____ sedimentary rocks are rocks that form when chemical precipitates harden.

12. As sediments are buried underneath newer sediments, weight causes _____ to occur

13. Loose sediments harden by process of _____ where fluids deposit ions.

14. A material that is a mineral and a rock is _____.

15. The sedimentary rock made of the smallest sediments is called _____.

Short Answer

Answer each question in the space provided.

16. Describe how sedimentary rocks are classified.

17. What are some uses of sedimentary rocks?

4.4 Metamorphic Rocks

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Metamorphism occurs when there is
 - a. heat only
 - b. pressure only
 - c. heat and pressure together
 - d. all of the above
2. Metamorphic rocks change
 - a. physically only
 - b. chemically only
 - c. physically and chemically together
 - d. any of the above
3. Contact metamorphism is caused by
 - a. heat from magma
 - b. water pressure
 - c. the weight of overlying rock
 - d. atmospheric pressure
4. Metamorphism changes rocks because
 - a. the minerals need to be stable under new conditions
 - b. the rocks melt
 - c. atoms break apart to form new atoms
 - d. the pressure causes foliation in each mineral
5. Regional metamorphism can be the result of
 - a. extreme heat
 - b. fluid infiltration
 - c. intense pressure from all directions
 - d. melting

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Foliation occurs when pressure is exerted from all directions equally.
- _____ 7. Regional metamorphism may expose rocks to high pressure and low temperature.
- _____ 8. A metamorphic rock can be metamorphosed.

_____ 9. A metamorphic rock nearly always resembles its original parent rock.

_____ 10. Metamorphic rocks can always be distinguished from igneous and sedimentary rocks because they are foliated.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. During metamorphism, _____ move between minerals.

12. A metamorphic rock with alternating bands of light and dark minerals is _____.

13. _____ metamorphism occurs when existing rock is altered by heat from a nearby magma.

14. A rock that is exposed to so much heat and pressure that it melts will cool to become a(n) _____ rock.

15. Banded layers found in metamorphic rock are known as _____.

Short Answer

Answer each question in the space provided.

16. What is hornfels? What processes lead to its creation?

17. What are metamorphic rocks used for?

4.5 Studying Rocks

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which type of rock forms from cooling magma?
 - igneous
 - sedimentary
 - metamorphic
 - all of these.
- Gravel, sand, silt, or clay are types of
 - minerals
 - rocklets
 - sediments
 - none of these
- How are igneous rocks classified?
 - size and shape
 - composition and grain size
 - texture and grain size
 - none of these
- What is the primary process by which rocks break down into sediments?
 - transport
 - weathering
 - erosion
 - pressure
- By raising their pressure temperature enough, rocks may form
 - new minerals
 - minerals bands
 - layers
 - all of these
- What are the flat layers that form as rocks are squeezed called?
 - foliation
 - layers
 - hornfels
 - bedding planes
- Sediments come together by these processes to create sedimentary rocks.
 - compaction and cementation

- b. precipitation and cementation
 - c. compaction and precipitation
 - d. compaction, cementation and precipitation
8. Regional metamorphism is due to extreme pressure caused by
- a. heat from magma
 - b. water pressure
 - c. the weight of overlying rock
 - d. atmospheric pressure
9. When sediments are buried the weight above them can make them into _____ rocks. When they are buried by more weight they can become _____ rocks.
- a. regional metamorphic; intrusive igneous
 - b. cemented sedimentary; intrusive igneous
 - c. clastic sedimentary; contact metamorphic
 - d. clastic sedimentary; regional metamorphic
10. For an igneous rock to become a metamorphic rock it must
- a. melt and then cool
 - b. be broken into fragments and then cemented together
 - c. change composition or mineral shape by heat or pressure
 - d. An igneous rock cannot become a metamorphic rock.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Rocks are naturally formed, non-living material.
- _____ 12. Most rocks are made up of only one type of mineral.
- _____ 13. Rocks are classified by their texture only.
- _____ 14. Precipitates are the solid materials left behind after a liquid evaporates.
- _____ 15. As magma cools, different crystals form in the process known as metamorphism.
- _____ 16. When a rock melts completely it can become the metamorphic rock migmatite.
- _____ 17. The rock cycle describes the transformation of one type of rock to another.
- _____ 18. When sediments become sedimentary rock they often have changes in composition.
- _____ 19. The White House is made of pink sandstone that was painted white.
- _____ 20. Fossils are the remains of once-living organisms.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. _____ igneous rocks solidify beneath the surface.
22. _____ cooling allows time for large crystals to form.
23. Sediments are laid down, or _____, before they can be formed into sedimentary rocks.
24. Fluids that crystallize in the spaces between the loose particles of sediments create rock by _____.
25. _____ metamorphism changes enormous quantities of rock over a wide area.
26. _____ metamorphism changes a rock that is in contact with magma because of the extreme heat.
27. In a metamorphic, minerals separate by _____ into lighter and darker bands.

28. The rocks that form from an erupting volcano are _____ rocks.

29. Cemented sediments become _____ sedimentary rocks.

30. _____ occurs when sediments are squeezed together by the weight of overlying sediments on top of them.

Short Answer

Answer each question in the space provided.

31. Briefly describe how igneous rocks form. How do both of the two main subcategories form?

32. Briefly describe how sedimentary rocks form. How do both of the two main subcategories form?

33. Briefly describe how metamorphic rocks form. How both of the two main subcategories form?

CHAPTER **5**

MS Earth's Energy Assessments

Chapter Outline

- 5.1 ENERGY RESOURCES
 - 5.2 NON-RENEWABLE ENERGY RESOURCES
 - 5.3 RENEWABLE ENERGY RESOURCES
 - 5.4 EARTH'S ENERGY
-

5.1 Energy Resources

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Kinetic energy is the energy that
 - is stored in food
 - comes from the sun to our planet
 - is contained by a body in motion
 - is stored by a body that is about to do work.
- Energy
 - can be created or destroyed
 - cannot be created or destroyed
 - can be created but not destroyed
 - can be destroyed but not created
- Fuel
 - can help you to kick a soccer ball
 - stores energy
 - releases energy
 - all of the above
- Fossil fuels
 - take millions of years to form
 - are plentiful all over the planet
 - are made of renewable resources
 - have few environmental consequences
- Possible problems with renewable energy sources include
 - they are limited in their availability
 - they may be expensive
 - they cause a lot of pollution
 - all of the above

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. A fuel is any material that can release energy in a chemical change.
- _____ 7. All energy sources are renewable.
- _____ 8. Breathing does not require energy because it happens without our noticing.

_____ 9. Energy cannot be created or destroyed.

_____ 10. Stored energy is called potential energy.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Energy is stored and released by _____.

12. When a fuel is burned, most of the energy is released as _____.

13. _____ is the ability to do work.

14. The partially decomposed remains of plants and animals make up _____.

15. Solar, tidal, and wind energy are examples of _____.

Short Answer

Answer each question in the space provided.

16. What does the law of conservation of energy say? Give an example of how it works.

17. What characteristics does a material need to have if it is going to be useful as an energy resource?

5.2 Non-renewable Energy Resources

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- To be useful, oil must be located in a(n) _____ rock layer and trapped by a(n) _____ rock layer.
 - impermeable, permeable
 - permeable, impermeable
 - impermeable, impermeable
 - permeable, permeable
- Which of the following fuels produces the least amount of carbon dioxide per unit of energy?
 - coal
 - oil
 - natural gas
 - all of these produce the same amount of carbon dioxide.
- Fuel made primarily of methane is called
 - coal
 - petroleum
 - natural gas
 - liquid gas
- The main gases that are a by-product of burning gasoline are
 - water vapor and carbon dioxide
 - carbon dioxide and sulfur compounds
 - sulfur compounds and nitrogen compounds
 - nitrogen compounds and carbon dioxide
- Nuclear power that is currently in use comes from.
 - combustion of uranium atoms
 - splitting uranium atoms
 - fusing uranium atoms
 - breaking electrons away from a uranium atom

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Fossil fuels come from the remains of ancient organisms.
- _____ 7. Hydrocarbons are all liquids, like gasoline.
- _____ 8. Oil and gas will fill our needs for a time period on the order of thousands of years.

_____ 9. Nuclear power plants produce so much energy because the process is not controlled.

_____ 10. Natural gas is useful as a fuel more-or-less as it comes out of the ground.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Chemicals made of one carbon atom and four hydrogen atoms are called _____.

12. A solid fossil fuel that is burned primarily for electricity is _____.

13. A major pollutant in coal is the element _____.

14. Ancient organisms that have been preserved in some form over time are _____.

15. The biggest contributor to global warming is the fossil fuel _____.

Short Answer

Answer each question in the space provided.

16. Describe how fossil fuels form.

17. Describe the process that turns coal into electricity.

5.3 Renewable Energy Resources

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. The primary barrier to solar energy use is that it
 - a. is not technically feasible
 - b. causes major pollution problems
 - c. is too expensive compared to other energy sources
 - d. all of these
2. Hydroelectric plants
 - a. produce a lot of greenhouse gases
 - b. create a reservoir that may bury natural or cultural resources
 - c. release sediment that can bury a landscape
 - d. produce nitric acid that falls as acid rain
3. Wind power
 - a. comes indirectly from solar energy
 - b. is cheap to harness on a large scale
 - c. is welcomed by people everywhere
 - d. produces a lot of greenhouse gases
4. Geothermal energy
 - a. has extreme safety issues because it is so hot
 - b. is best where hot water comes to the surface
 - c. requires cool water be pumped into the ground
 - d. produces a lot of greenhouse gases
5. When energy moves through material, but the material itself does not move, this is
 - a. radiation
 - b. convection
 - c. electromagnetism
 - d. conduction

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Wind power has only been harnessed in recent years.
- _____ 7. The largest geothermal power plant in the United States is in Iceland.
- _____ 8. To produce electricity, a resource must somehow turn a turbine.

_____ 9. The land upstream of a dam may be flooded.

_____ 10. Most of Earth's energy comes directly or indirectly from the Sun.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. In principle, _____ resources will never run out.

12. _____ energy comes from plants and animals that were recently living.

13. Solar energy is carried between the Sun and Earth as _____.

14. Where cool Pacific Ocean air is pulled into warmer inland valleys, _____ power may be harnessed.

15. Energy moving from a higher temperature object to an adjacent lower temperature object it is called _____ - _____.

Short Answer

Answer each question in the space provided.

16. How do solar power plants turn sunlight into electricity?

17. Describe how a hydroelectric dam harnesses the energy of stored water.

5.4 Earth's Energy

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Most of Earth's energy comes from the Sun. Where does the rest come from?
 - a. nuclear fusion
 - b. biomass
 - c. fossil fuels
 - d. internal heat
2. What type of energy is used when your body breaks down the food you eat?
 - a. kinetic
 - b. chemical
 - c. potential
 - d. nuclear
3. Which of the following does not produce carbon dioxide?
 - a. oil
 - b. nuclear
 - c. coal
 - d. natural gas
4. Nuclear fusion powers _____.
 - a. the Sun
 - b. Earth's internal heat
 - c. nuclear power plants
 - d. none of these
5. Resources that will not run out are
 - a. non-infinite
 - b. infinite
 - c. renewable
 - d. non-renewable
6. Before fossil fuel use became widespread, which of the following did people use for energy?
 - a. wind
 - b. water
 - c. animals
 - d. all of these
7. What is the single largest source of energy for electricity?
 - a. coal

- b. oil
 - c. natural gas
 - d. wind
8. The United States
- a. is a net oil exporter
 - b. produces just as much oil as it uses
 - c. produces far less oil than it uses
 - d. has no oil resources
9. The transfer of light energy from the sun to the earth is known as...
- a. reflection
 - b. radiation
 - c. fusion
 - d. fission
10. What is the world's most widely used form of renewable energy?
- a. solar
 - b. wind
 - c. hydropower
 - d. geothermal

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. The law of conservation of energy states that energy cannot be created or destroyed.
- _____ 12. Potential energy is the energy of anything in motion.
- _____ 13. The energy to make electricity comes from heat.
- _____ 14. Wind, geothermal, solar and nuclear energy are all examples of renewable energy resources.
- _____ 15. Fossil fuels come from organisms that died many millions of years ago.
- _____ 16. Hydrocarbons can be solid, liquid or gaseous.
- _____ 17. All fossil fuels can be made into liquids.
- _____ 18. Crude oil is so pure it needs no refining.
- _____ 19. Wind farms are sometimes not developed because they are considered to be unsightly.
- _____ 20. Oil is used to produce waxes, plastics, fertilizers, and other products.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. _____ is the ability to do work and produce change.
22. When you hold a ball above the ground the ball has _____ energy.
23. _____ is any material that can release energy in a chemical change.
24. _____ resources will not run out because they are extremely abundant or rapidly replaced.
25. Coal may contain impurities such as _____.
26. _____ is a liquid fossil fuel that can be used in vehicles.
27. Nuclear power plants use the element _____ that has been concentrated into fuel rods.
28. Natural gas is mostly the hydrocarbon _____.

29. The movement of hot material to a cooler location is _____.
30. _____ power is the fastest growing renewable energy source in the world.

Short Answer

Answer each question in the space provided.

31. What are the upsides of nuclear power? What are the downsides of nuclear power?

32. What are the advantages and disadvantages of wind power?

33. Explain the problems with non-renewable energy sources.

CHAPTER **6**

MS Plate Tectonics Assessments

Chapter Outline

- 6.1 INSIDE EARTH
 - 6.2 CONTINENTAL DRIFT
 - 6.3 SEAFLOOR SPREADING
 - 6.4 THEORY OF PLATE TECTONICS
 - 6.5 PLATE TECTONICS
-

6.1 Inside Earth

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Seismic waves travel
 - a. at the same speed
 - b. through all materials
 - c. outwards in all directions
 - d. in a straight line
2. The lithosphere is
 - a. the brittle crust and uppermost mantle
 - b. another name for the crust
 - c. where convection is strongest
 - d. the upper part of the mantle
3. Scientists know that Earth's core is metal because of
 - a. the planet's high overall density
 - b. the magnetic field
 - c. metallic meteorites
 - d. all of these
4. Compared to continental crust, oceanic crust
 - a. is thicker
 - b. is denser
 - c. more varied in its rock types
 - d. more magnetic
5. Heat in the mantle moves by
 - a. radiation
 - b. conduction
 - c. convection
 - d. heat flow

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Some seismic waves (S-waves) cannot travel through the outer core so we know it is molten.
- _____ 7. The lithosphere is solid but it can flow.
- _____ 8. The mantle and the asthenosphere are different names for the same thing.

_____ 9. We can hold something like the core in our hands: a metallic meteorite.

_____ 10. Meteorites may represent material from the early solar system.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Earthquake energy travels through rocks as _____.

12. The outer brittle layer of the Earth is called the _____.

13. When heat moves from warmer to cooler objects without material moving it is called _____.

14. _____ crust is made of igneous, sedimentary and metamorphic rocks.

15. Warm mantle rises and sinks in a(n) _____.

Short Answer

Answer each question in the space provided

16. How do seismic waves give information to scientists about Earth's interior layers?

17. What are the three layers of Earth that differ in chemical composition? Give a brief description.

6.2 Continental Drift

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Mountain ranges located on both side of the Atlantic Ocean
 - a. are the same height and width
 - b. have the same rock types, structures and ages
 - c. have ancient fossils and coal seams
 - d. are just separate mountain ranges
2. Scientists didn't accept the continental drift idea because
 - a. there was almost no evidence for it
 - b. Wegener was not liked and no one listened to him
 - c. there were many other ways to explain the evidence
 - d. none of these
3. Magnetic minerals in volcanic rock point to
 - a. the current north magnetic pole
 - b. the north magnetic pole at the time they crystallized
 - c. the north magnetic pole on the adjacent continent.
 - d. none of these
4. Wegener's idea is correctly referred to as
 - a. the continental drift hypothesis
 - b. the continental drift theory
 - c. the plate tectonics hypothesis
 - d. the plate tectonics theory
5. What was Wegener's continental drift idea?
 - a. The continents have always been located at their current locations.
 - b. The continents are moving slowly together from their current locations.
 - c. The continents have moved slowly apart to their current locations.
 - d. None of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Similar fossil records across continents was evidence for continental drift.
- _____ 7. The magnetic north pole and geographic north pole are in the same location.
- _____ 8. If an ancient coral reef is found in the arctic it means that the continent it is on has drifted.

- _____ 9. The continents have never all been together as a single whole continent.
- _____ 10. The locations of ancient climate zones provide evidence for continental drift.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Alfred Wegener named his single supercontinent _____, which means "all Earth" in ancient Greek.
12. Coal is mined in many cold regions, but it is thought to form in _____ climates.
13. The most common type of magnetic minerals called _____.
14. Rocks and structures on both sides of the _____ Ocean are very similar.
15. When all the continents are together, it is called a(n) _____ continent.

Short Answer

Answer each question in the space provided

16. How and why does the seed fern, Glossopteris, provide evidence that the continents were once all joined together?

17. Why did scientists reject Wegener's continental drift idea?

6.3 Seafloor Spreading

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Before echo sounders, scientists thought topography of the seafloor
 - a. was just like the topography of the continents
 - b. had many long linear mountain ranges, like Japan
 - c. had lots of small hills, but nothing else
 - d. was completely flat
2. In the Atlantic Ocean, the mid-ocean ridge is
 - a. a straight line between the Americas and Europe/Africa
 - b. a line that mimics the coastlines of the Americas and Europe/Africa
 - c. not visible
 - d. none of these
3. At a time of reversed magnetic polarity, the north and south poles are
 - a. aligned as they are now
 - b. in somewhat different locations from where they are now
 - c. in the opposite positions from where they are now
 - d. none of these
4. New oceanic crust is created
 - a. at mid-ocean ridges
 - b. at deep sea trenches
 - c. within abyssal plains
 - d. at long, linear chains of volcanoes
5. Since new oceanic crust is being created
 - a. Earth must be getting larger
 - b. mountains must be rising somewhere
 - c. old crust must be destroyed somewhere
 - d. none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Two different plates of lithosphere lie on each side of the mid-ocean ridge.
- _____ 7. The mid-ocean ridge is the longest mountain range on Earth.
- _____ 8. The mid-ocean ridge is only found in the Atlantic Ocean.

- _____ 9. The seafloor is oldest at the mid-ocean ridges
- _____ 10. Magnetic polarity stripes end at the edges of continents.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The depth of the ocean floor can be recorded by using a(n) _____.
12. Seafloor maps were made using data gathered during the historical event called _____.
13. The flat areas of the oceans are called the _____.
14. When the magnetic poles switch positions, the _____ pole becomes the _____ pole.
15. At mid-ocean ridges, hot _____ rises to the surface.

Short Answer

Answer each question in the space provided

16. Describe the patterns of the magnetic stripes around the mid-ocean ridge.

17. Describe the seafloor spreading hypothesis.

6.4 Theory of Plate Tectonics

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Earth's plates are made of slabs of
 - a. crust
 - b. upper mantle
 - c. crust and upper mantle
 - d. asthenosphere
2. The outlines of the plates are located by mapping
 - a. earthquake epicenters
 - b. continental margins
 - c. the locations of earthquake faults
 - d. mid-ocean ridges
3. If a divergent plate boundary is found within a continent,
 - a. a line of volcanoes forms
 - b. a subduction zone forms
 - c. the continent rifts apart
 - d. none of these.
4. An island arc forms when
 - a. two oceanic plates diverge
 - b. a continental plate sub ducts beneath an oceanic plate
 - c. an oceanic plate sub ducts beneath a continental plate
 - d. an oceanic plate sub ducts beneath an oceanic plate
5. Plate tectonics theory says that
 - a. Earth's geography has been the same for all geologic time
 - b. Earth's geography is continually changing
 - c. all geological activity happens at plate boundaries
 - d. continents drift but scientists do not yet know why.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. All volcanoes and earthquakes take place at plate boundaries.
- _____ 7. At transform plate boundaries, two plates move toward each other.
- _____ 8. Earthquakes at transform plate boundaries are fairly small.

_____ 9. Seafloor spreading is what makes the continents move.

_____ 10. The youngest volcano in Hawaii is below sea level.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. New land is created at a _____ plate boundary.

12. The Hawaiian Island chain was formed by a(n) _____.

13. Volcanoes are caused by the _____ of one plate under another.

14. The line of volcanoes of South America are a(n) _____ caused by subduction.

15. The continuous joining and separating of landmasses is known as the _____ cycle.

Short Answer

Answer each question in the space provided

16. Describe the process that causes the plates to move.

17. What are the three types of plate boundaries? How do the plates move relative to each other? At which are there volcanoes? At which are there earthquakes?

6.5 Plate Tectonics

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Scientists learn about our planet's interior from
 - a. tracking seismic waves
 - b. probes in deep mines
 - c. diving into deep ocean trenches
 - d. satellite imagery
2. The lithosphere
 - a. is partially molten
 - b. is brittle
 - c. behaves plastically
 - d. can flow
3. How did Wegener explain the presence of Mesosaurus fossils on Africa and South America?
 - a. The continents were joined when Mesosaurus lived and then moved apart.
 - b. Mesosaurus swam across the Atlantic Ocean
 - c. a land bridge across the Atlantic Ocean connected the two continents
 - d. none of these
4. Which process moves heat from the warmer to cooler places until all are the same temperature?
 - a. radiation
 - b. convection
 - c. conduction
 - d. none of the above
5. During the time of Pangaea,
 - a. organisms lived side-by-side that are now fossils on distant continents.
 - b. there was no Atlantic Ocean.
 - c. there were one magnetic north pole.
 - d. all of these.
6. Everywhere across the seafloor, scientists find
 - a. flat, sediment covered bathymetry.
 - b. increasing crust thickness toward the mid-ocean ridges.
 - c. magnetic stripes with normal and reversed polarity.
 - d. none of the above
7. Volcanoes are found at _____ plate boundaries.
 - a. all three types of

- b. divergent and convergent
 - c. convergent and transform
 - d. transform and divergent
8. What type of plate boundary is found at the San Andreas Fault?
- a. convergent
 - b. divergent
 - c. transform
 - d. none of the above
9. With distance from the mid-ocean ridge
- a. the crust becomes thicker
 - b. the sediment becomes thinner
 - c. the rocks become younger
 - d. none of these
10. All deep sea trenches are located
- a. in the polar regions
 - b. in the middle of the oceans
 - c. at the edges of continents
 - d. near chains of active volcanoes

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Continental crust is thicker than oceanic crust.
- _____ 12. In a magnetic reversal, the north and south magnetic poles switch.
- _____ 13. A new supercontinent forms about every 500,000,000,000 years.
- _____ 14. Continental crust is too thick for hotspot volcanoes to break through.
- _____ 15. Metallic meteorites represent Earth's core.
- _____ 16. The Himalaya Mountains rise up at a transform plate boundary.
- _____ 17. The magnetic field is caused by convection in the mantle.
- _____ 18. Some rocks found on opposite sides of the Atlantic are extremely similar in type and age.
- _____ 19. The continents can fit together like pieces of a puzzle.
- _____ 20. Wegener used fossil evidence to support his continental drift hypothesis.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. _____ waves are released in all directions from an earthquake.
22. The _____ is composed of hot rock that can flow.
23. The core is composed of _____.
24. _____ are flat areas in ocean basins that are covered with sediment.
25. A _____ is a line of volcanoes caused by the subduction of an oceanic plate beneath a continental plate.
26. Subduction destroys older crust at deep sea _____.
27. Geological activity that occurs away from plate boundaries is called _____ activity.
28. The edges of continental plates can be drawn by connecting the dots that mark _____ epicenters.

29. Lithospheric plates move at the rate of a few _____ per year.

30. The Himalayan Mountains rise at a(n) _____ plate boundary.

Short Answer

Answer each question in the space provided.

31. List the three types of plate boundaries and describe the motion of each.

32. List the evidence for continental drift.

33. Diagram and describe the internal structure of Earth.

CHAPTER **7**

MS Earthquakes Assessments

Chapter Outline

- 7.1 STRESS IN EARTH'S CRUST
 - 7.2 THE NATURE OF EARTHQUAKES
 - 7.3 MEASURING AND PREDICTING EARTHQUAKES
 - 7.4 STAYING SAFE IN EARTHQUAKES
 - 7.5 EARTHQUAKES
-

7.1 Stress in Earths Crust

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- As a rock experiences more stress it
 - deforms plastically, then elastically, then breaks
 - breaks, then deforms plastically, then elastically
 - deforms elastically, then plastically, then breaks
 - breaks, then deforms elastically, then plastically
- In the Grand Canyon, the Kaibab Limestone is above the Toroweap Formation. We can say that
 - the Kaibab is the oldest rock layer in the canyon
 - the Toroweap is the oldest rock layer in the canyon
 - the Kaibab is older than the Toroweap
 - the Toroweap is older than the Kaibab
- When rocks deform plastically, they tend to
 - return to their original state.
 - fold
 - break
 - fracture
- In a normal fault,
 - the fault plane is roughly vertical
 - the dip of the fault plane is nearly horizontal
 - the hanging wall pushes up relative to the footwall
 - the footwall pushes up relative to the hanging wall
- Large mountain ranges, like the Grand Tetons in Wyoming, are uplifted on
 - normal faults
 - reverse faults
 - dip-slip faults
 - strike-slip faults

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. If very old rocks are above much younger rocks there may be a thrust fault in between.
- _____ 7. A deeply buried rock is under compressive stresses.
- _____ 8. The terrain known as basin-and-range is caused by compressive forces.

_____ 9. The amount the ground moves in an earthquake is called slip.

_____ 10. In a strike-slip fault, the dip of the fault plane is vertical.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Forces that pull rocks apart are called _____ forces.

12. A break in rock along which there is no movement is a(n) _____.

13. A fold that bends down in the center is a(n) _____.

14. The displacement of rocks on either side of a _____ fault can be hundreds of miles.

15. An eroded _____ will have oldest rock layer found at the center.

Short Answer

Answer each question in the space provided.

16. List and briefly describe the four different types of stress.

17. Describe the plate tectonics setting that is causing the rise of the Himalaya Mountains.

7.2 The Nature of Earthquakes

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Earthquakes cause _____ faulting.
 - normal
 - reverse
 - thrust
 - all of these
- When a S wave travels from a solid to a liquid, its velocity
 - stays the same
 - increases
 - decreases
 - ends, because the wave can't travel through a liquid.
- Deep earthquakes, more than 300 km (200 miles) deep, are associated with _____.
 - convergent plate boundaries
 - divergent plate boundaries
 - transform plate boundaries
 - all of these
- The San Andreas Fault
 - is where the Pacific Plate sub ducts beneath the North American Plate.
 - is part of the ring of volcanoes and earthquakes around the Pacific Ocean basin.
 - is the fault where all major earthquakes occur in California.
 - is the site of shallow, intermediate and deep focus earthquakes.
- An earthquake in the New Madrid, Missouri seismic zone
 - would not kill many people; only 20 died in 1812.
 - would not kill many people; earthquakes on the fault are fairly small.
 - could kill many times more people than in 1812.
 - will not happen again; the 1812 quake relieved the stresses.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Earthquakes at divergent boundaries tend to be small.
- _____ 7. The height of a seismic wave is known as its wavelength.
- _____ 8. Sea waves from earthquakes can devastate coasts but be unnoticed at sea.

- _____ 9. The Seismic Wave Theory explains how earthquakes occur.
- _____ 10. About 95% of earthquakes occur along the three types of plate boundaries.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Seismic waves that travel through the body of a planet are known as _____.
12. _____ are scientists that study earthquakes.
13. The distance between two adjacent wave crests or wave troughs is called _____.
14. After the Pacific basin, the region most likely to experience earthquakes is the _____.
15. The _____ of the earthquake was located 10 km below the surface.

Short Answer

Answer each question in the space provided.

16. Describe what causes a tsunami and why one is so destructive.

17. Explain elastic rebound theory.

7.3 Measuring and Predicting Earthquakes

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. If a seismograph records P-waves but not S-waves from an earthquake, it means
 - a. the quake wasn't very strong
 - b. the quake was very far away
 - c. the quake was on the opposite side of the planet
 - d. the seismograph was in the wrong spot
2. Where is the focus with respect to the epicenter?
 - a. directly below the epicenter
 - b. directly above the epicenter
 - c. in the P wave shadow zone
 - d. in the S wave shadow zone
3. Which of the following measures the observed effects on people and structures of an earthquake?
 - a. Richter scale
 - b. Modified Mercalli scale
 - c. the Centigrade scale
 - d. the moment magnitude scale
4. Which of the following statements best describes the state of earthquake prediction?
 - a. scientists can accurately predict the time and location of almost all earthquakes
 - b. scientists can accurately predict the time and location of about 50% of all earthquakes
 - c. scientists can accurately predict when an earthquake will occur, but not where
 - d. scientists can characterize the seismic risk of an area, but cannot yet accurately predict most earthquakes
5. If the arrival time of the first P-wave and the first S-wave is long, the epicenter is
 - a. far away
 - b. very close
 - c. very deep
 - d. near the surface

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Seismographs can help to determine the intensity of an earthquake.
- _____ 7. The intensity of an earthquake is directly related to its distance from the epicenter.
- _____ 8. An earthquake with magnitude between 8.9 and 8.9 happens about once per year.

_____ 9. Scientists can better predict when an earthquake will occur than where it will occur.

_____ 10. The time difference between the P & S wave shows the intensity of an earthquake.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The first seismic waves to arrive at a seismograph are the _____.

12. The _____ of a circle around a seismic station is the distance to an earthquake epicenter.

13. The _____ scale measures the largest jolt of energy of an earthquake.

14. To find an earthquake epicenter, you need data from a minimum of _____ seismographs.

15. Since 1900 there have been _____ earthquakes in the magnitude 9 range.

Short Answer

Answer each question in the space provided.

16. How do scientists determine the distance of an earthquake epicenter from a seismograph?

17. Which is the best scale for giving earthquake magnitude and why?

7.4 Staying Safe in Earthquakes

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which of the following hardly ever kills anyone in an earthquake?
 - structures falling
 - ground shaking
 - fire
 - tsunami
- Not too many people died in the Great Alaska Earthquake in 1964 because
 - few people lived in the area
 - it was not a large quake
 - the ground was so solid that the shock was absorbed.
 - none of these
- If you want to be safe in an earthquake, build your house on
 - soft sediments that absorb shock
 - sediments that will undergo liquefaction
 - solid bedrock
 - any type of ground is fine, just build a solid house
- To keep gas lines and water mains from breaking in an earthquake,
 - make them completely solid so that they don't break.
 - put them above ground so that they don't break.
 - zigzag the pipes so that they bend to absorb ground shaking.
 - b c
- Which of the following is something that you should NOT do during an earthquake.
 - Take an elevator to the ground floor so that you can run outside.
 - Stay away from things that can break or fall on you.
 - Dive underneath a sturdy piece of furniture.
 - Run to an open area if you are outside.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. In case of an earthquake, a one day supply of food and water is enough for a family.
- _____ 7. Large buildings can be placed on rollers so that they move as the ground moves.
- _____ 8. The largest recorded earthquake was 12.3 on the Richter Scale

_____ 9. City planners predict the Mercalli Intensity of a future earthquake around the region.

_____ 10. Elevated freeways cannot be retrofitted for earthquakes

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. When sediments mix with water and become like quicksand, they have undergone _____.

12. A building undergoes _____ when it is altered to be more safe in an earthquake.

13. In the 1906 San Francisco earthquake, the most damage was done by _____.

14. _____ light bulbs are less of a fire risk than incandescent bulbs.

15. You should have flashlights available if the power goes out and don't forget the _____ to keep them working.

Short Answer

Answer each question in the space provided.

16. List five things that a family in an earthquake zone should do to prepare for an earthquake.

17. Explain why all of the structures built in the United States are not built to meet earthquake standards.

7.5 Earthquakes

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Which forces squeeze rocks together, causing them to fold or fracture?
 - a. shear
 - b. tensional
 - c. compressional
 - d. strain
2. When rocks deform plastically under compression stresses they
 - a. create folds
 - b. create faults
 - c. create shears
 - d. break
3. At which type of plate boundary, do the world's largest mountains grow?
 - a. transform
 - b. divergent
 - c. convergent
 - d. none of the above
4. The sudden release of energy stored in rocks creates
 - a. earthquakes
 - b. folds
 - c. volcanoes
 - d. none of these
5. The main reason there are so many earthquakes around the Pacific ocean basins is
 - a. the large number of convergent plate boundaries
 - b. the large number of divergent plate boundaries
 - c. the large number of transform plate boundaries
 - d. the extreme solidity of the Pacific plate
6. How do rock particles move during the passage of a S wave through the rock?
 - a. back and forth parallel to the direction of wave travel
 - b. back and forth perpendicular to the direction of wave travel
 - c. in a rolling elliptical motion
 - d. up and down perpendicular to the direction of wave travel
7. As stresses build in a region, the rocks
 - a. break quickly

- b. deform plastically and then break
 - c. deform plastically but bounce back into shape
 - d. b c
8. Mountain ranges rise where there are
- a. shear stresses
 - b. compressive stresses
 - c. tensional stresses
 - d. b c
9. A useful earthquake prediction will include the quake's
- a. type
 - b. timing
 - c. magnitude
 - d. b c
10. One reason fewer people die in developed nations than developing ones in the same magnitude earthquake is
- a. there is a lower population density
 - b. in developed nations, people only build in safe places
 - c. the quality of construction is better
 - d. there is better earthquake prediction i

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Shear stress is the most common stress at transform plate boundaries.
- _____ 12. A fracture is when the rock breaks.
- _____ 13. Stress applied over time often leads to plastic deformation.
- _____ 14. Sedimentary rocks are formed with the youngest layers on the bottom and the oldest on top.
- _____ 15. Sedimentary rocks layers that are not horizontal are deformed.
- _____ 16. An anticline is a fold that bends downward.
- _____ 17. The movement of blocks of rocks on one or both sides of a fracture is called a joint.
- _____ 18. Slip is the distance rocks move along a fault.
- _____ 19. Two converging continental plates smash downwards and create mountain ranges.
- _____ 20. In an earthquake, the initial point where the rocks rupture in the crust is called the epicenter.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. Rocks that are pulled apart are under _____.
22. When stress causes a material to change, it has undergone _____.
23. In a _____ fault, the hanging wall moves upward relative to the footwall.
24. A _____ is a simple bend in the rock layers so that they are no longer horizontal.
25. A _____ is a circular structure in which the rocks bend downward.
26. A _____ fault is a type of reverse fault in which the fault plane angle is nearly horizontal.
27. The point where movement occurred which triggered the earthquake is the _____.
28. The waves that do the most damage in an earthquake are _____ waves.

29. The height of a wave from the center line to its crest is its _____.

30. An earthquake kit should have _____ days of supplies.

Short Answer

Answer each question in the space provided.

31. Explain why the 2004 Indian Ocean Earthquake and Tsunami was so deadly.

32. List the three methods for describing earthquake size. Explain each.

33. How do scientists predict where an earthquake will occur?

CHAPTER **8** MS Volcanoes Assessments

Chapter Outline

- 8.1** WHERE VOLCANOES ARE LOCATED
 - 8.2** VOLCANIC ERUPTIONS
 - 8.3** TYPES OF VOLCANOES
 - 8.4** VOLCANIC LANDFORMS AND GEOTHERMAL ACTIVITY
 - 8.5** VOLCANOES
-

8.1 Where Volcanoes Are Located

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- For a volcano to form, there must be
 - earthquakes
 - magma
 - a convergent plate boundary
 - a transform plate boundary
- Why are there volcanoes in Central America?
 - the area is an extension of the San Andreas Fault
 - subduction at the Middle American Plate
 - subduction of the Juan de Fuca plate
 - none of the above
- How many hot spots are located on Earth
 - about 50
 - about 100
 - over 1000
 - 1
- A volcanic arc forms
 - at a divergent plate boundary
 - away from plate boundaries
 - at a convergent plate boundary
 - none of these
- The oldest volcanoes in a hotspot chain
 - are furthest from the hotspot.
 - may be below sea level.
 - may be surrounded by coral reefs.
 - all of these.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Most volcanoes are found in the Himalayan-Asiatic belt.
- _____ 7. All volcanoes are located on continental crust.
- _____ 8. Yellowstone is one of the few hotspots at a convergent plate boundary.

_____ 9. All volcanoes are the result of plate tectonics processes.

_____ 10. Many volcanoes occur at convergent plate boundaries.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The Ring of Fire is located around the _____ ocean basin.

12. The Ring of Fire is lined with _____ plate boundaries.

13. Large cracks in the ground through which lava erupts are called _____.

14. Volcanoes erupt at mid-ocean ridges along _____ plate boundaries.

15. Above a mantle plume is the volcano that is _____ in age in a hotspot chain.

Short Answer

Answer each question in the space provided.

16. At what three geologic settings are volcanoes found? In one sentence each, describe why volcanoes are found there.

17. What are the relative ages of volcanoes in a chain with a hotspot at one end?

8.2 Volcanic Eruptions

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Non-explosive eruptions
 - a. cause little damage
 - b. rarely kill anyone
 - c. have lavas that contain a lot of gas
 - d. all of these
2. A volcano that has had no activity for quite a long time is said to be
 - a. active
 - b. sleeping
 - c. dormant
 - d. extinct
3. An ash plume from a volcano in Iceland
 - a. disrupted air travel across Europe for six days in 2010
 - b. mixed with pollutants in the atmosphere to cause excess acid rain
 - c. created pillow lavas offshore
 - d. created A'a and pāhoehoe lavas offshore
4. To see if a volcano will soon erupt, satellites can sense
 - a. earthquakes
 - b. rock fall
 - c. temperature, deformation and gases
 - d. nothing; satellites are too high up
5. The ability of scientists to predict volcanic eruptions is
 - a. excellent in most locations
 - b. about 50-50
 - c. an area of science that needs improvement
 - d. never going to improve; it's just too hard.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. At least one of the Cascades volcanoes has been actively erupting for at least a century.
- _____ 7. Gases from volcanoes can be poisonous.
- _____ 8. Volcanic eruptions in Hawaii are usually explosive.

_____ 9. Eruptions that are non-explosive have little or no gas.

_____ 10. An increase in earthquake activity is a sign that a volcano may be about to erupt.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Magma and gases collect beneath a volcano in a(n) _____.

12. A volcano that is not currently erupting, but has erupted recently is said to be _____.

13. A'a and pāhoehoe lavas are from _____ eruptions.

14. Hot fragments of rock that fly high and fast into the air are called _____.

15. Fluid lava in the water cools quickly, forming a shape called _____.

Short Answer

Answer each question in the space provided.

16. What causes some volcanic eruptions to be explosive?

17. Why might a volcano change shape before an eruption?

8.3 Types of Volcanoes

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Lava that is fluid and flows easily creates
 - cinder cones
 - pyroclastic flows
 - composite cones
 - shield volcanoes
- The opening in the top of a composite volcano is a
 - hole
 - crater
 - fissure
 - vent
- Cinder cones usually grow
 - from large numbers of fluid lava flows
 - from periodic eruptions of lava and ash
 - rapidly, usually in a single eruption
 - in large, explosive eruptions
- A composite volcano has layers of
 - thick lava and ash
 - fluid lava and viscous lava
 - ash and fluid lava
 - fluid lava, thick lava, and ash
- A caldera is created by
 - a set of fluid lava flows evacuating a magma chamber.
 - the earthquakes that accompany a large volcanic eruption.
 - a set of ash flows and lava flows building up a flat topped volcano.
 - the collapse of a volcano into its magma chamber.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Composite volcanoes are made of fluid magma.
- _____ 7. The composition of lava in a shield volcano changes over time.
- _____ 8. Magma travels through the volcano to the surface through a pipe.

_____ 9. Supervolcanoes only erupted early in Earth history when the planet was hotter.

_____ 10. A volcanic mountain is a mountain that forms when magma is forced upward and flows onto Earth's surface.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. _____ volcanoes are found on continents near plate boundaries and are very explosive when they erupt.

12. Crater Lake in Oregon is a(n) _____ in old Mount Mazama.

13. The most common volcano type at spreading centers and intraplate hot spots is _____ volcanoes.

14. The U.S. state with the most shield volcanoes is _____

15. A volcano that erupts in enormous, catastrophic eruptions is called a(n) _____

Short Answer

Answer each question in the space provided.

16. Which type of volcano has the classic volcano shape? What makes it have that shape?

17. What is Yellowstone? What might happen if Yellowstone erupts again?

8.4 Volcanic Landforms and Geothermal Activity

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Lava domes are created by
 - fluid lava that fills a crater
 - thick lava that does not move far from the vent
 - fluid lava that flows over a large area
 - alternating layers of silica-rich lava and ash
- Lava fluid that flows over a large area is called a
 - lava plateau
 - lava dome
 - volcano
 - cinder cone
- What is formed when water comes into contact with hot rock?
 - a geyser
 - a hot spring
 - an earthquake
 - a b
- When lava flows into or erupts into the ocean, it creates
 - geysers
 - new land
 - the most explosive eruptions
 - a b
- The volcanoes that are currently active on Earth are
 - cinder cones, composite volcanoes, shield volcanoes and supervolcanoes
 - composite volcanoes and shield volcanoes
 - cinder cones, composite volcanoes, shield volcanoes
 - supervolcanoes

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Magma that cools at the surface forms igneous intrusions.
- _____ 7. The youngest volcano of Hawaii does not rise above sea level.
- _____ 8. Shiprock in New Mexico is a lava dome.

_____ 9. There are many thousands of geysers in volcanic areas all around the world.

_____ 10. The eruptions of all of the geysers in Yellowstone are predictable, like Old Faithful.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The most common landforms created by lava are _____.

12. A plug of thick lava that cools near the vent of a volcano is called a(n) _____.

13. When underground water is heated by hot rock so that it flows to the surface it produces a(n) _____ .

14. When hot water erupts at the surface it is as a(n) _____ .

15. Igneous _____ beneath volcanoes create volcanic landforms.

Short Answer

Answer each question in the space provided.

16. How can volcanic eruptions create an island, like Hawaii?

17. Describe how a geyser is created and why it erupts.

8.5 Volcanoes

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- The Hawaiian islands are found at a(n)
 - divergent boundary
 - hot spot
 - convergent boundary
 - transform boundary
- The most geologically active region in the world is the
 - Ring of Fire
 - Alps
 - Yellowstone Basin
 - Himalaya-Asiatic Belt
- When magma moves beneath a volcano it may cause
 - earthquakes
 - slope deformation
 - an eruption
 - all of these
- A sign that an eruption could soon occur is
 - less gases coming from the volcano
 - an decrease in the number and size of earthquakes
 - rocks falling down the volcano's slope
 - all of these
- Some volcanoes have steep slopes because
 - thick lava solidifies before it gets far down slope
 - fluid lava solidifies before it gets far down slope
 - ash does not fall far from the vent
 - earthquakes cause slopes to steepen
- A volcano that could erupt, but hasn't recently is
 - dead
 - active
 - dormant
 - extinct
- Which type of volcano is Kilauea in Hawaii?
 - shield

- b. composite
 - c. cinder cone
 - d. supervolcano
8. What is the most common type of volcano?
- a. shield
 - b. cinder cone
 - c. composite
 - d. supervolcano
9. Scientists think that supervolcano eruptions could have
- a. permanently altered the composition of the atmosphere
 - b. caused large land areas to fall into the sea
 - c. changed the directions of plate movement
 - d. caused mass extinctions
10. What is created when water is heated beneath the Earth's surface and erupts to the surface through a narrow passageway?
- a. lava plateau
 - b. lava dune
 - c. geyser
 - d. hot spring

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Subduction at the Middle American Trench creates volcanoes in Hawaii.
- _____ 12. A geyser is a hot spring that erupts because the hot water becomes trapped.
- _____ 13. Lava erupts through long cracks in the ground called fissures.
- _____ 14. Intraplate volcanoes are found at convergent plate boundaries.
- _____ 15. Volcanoes at divergent plate boundaries create oceanic crust.
- _____ 16. A supervolcano eruption occurs about once per century.
- _____ 17. A large explosive eruption has about the same power as an atomic bomb.
- _____ 18. Volcanic gases include sulfur dioxide, carbon dioxide, and water vapor.
- _____ 19. Non-explosive eruptions cause almost no deaths or property damage.
- _____ 20. Cinder cones are found with composite volcanoes, but not shield volcanoes.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. Some volcanic gases can be detected using _____ monitoring.
22. A _____ is a vent through which molten rock and gas escape from the magma chamber.
23. The shape of a volcano is related to the composition of its _____.
24. Cinder cone volcanoes usually have a _____ at their summit.
25. With distance from a hotspot, a chain of volcanoes becomes _____ in age.
26. When magma cools deeper in the crust it forms _____.
27. Most volcanoes are the result of the process of _____ at convergent plate boundaries.

28. An explosive eruption may create a _____, a large hole into which the mountain collapses.
29. The Andes Mountains that line South America are at a(n) _____ boundary.
30. _____ are found at divergent plate boundaries as continents break apart.

Short Answer

Answer each question in the space provided.

31. Look at the plate tectonics map of the world. In the western North and Central America, where are there volcanoes? Why are there volcanoes in those locations? Why are there no volcanoes through much of California?

32. Explain how volcanic eruptions are predicted.

33. How can volcanoes be considered constructive? How can volcanoes be considered destructive?

CHAPTER

9

MS Weathering and Formation of Soil Assessments

Chapter Outline

- 9.1 WEATHERING
 - 9.2 SOILS
 - 9.3 WEATHERING AND FORMATION OF SOIL
-

9.1 Weathering

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. If pieces of a rock flake off due to extreme temperature differences, it would be
 - a. erosion
 - b. mechanical weathering
 - c. chemical weathering
 - d. transportation
2. Chemical weathering
 - a. is unrelated to mechanical weathering
 - b. can go faster when there has been mechanical weathering
 - c. is slowed down after there has been mechanical weathering
 - d. none of these
3. If a mineral changes to a different type it has experienced
 - a. erosion
 - b. physical weathering
 - c. chemical weathering
 - d. transportation
4. Minerals undergo chemical weathering because
 - a. they formed at different pressure and temperature
 - b. they first undergo mechanical weathering
 - c. they break apart by mechanical weathering
 - d. water takes away some of their ions
5. Because carbon dioxide combines with water in the atmosphere
 - a. average global temperatures are rising
 - b. plants die off
 - c. the atmosphere is warmer
 - d. rainwater is a weak acid

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Important agents of chemical weathering include oxygen, carbon dioxide and sulfur.
- _____ 7. If temperature increases by 10°C, the rate of chemical reactions will double.
- _____ 8. All rocks weather at the same rate.

_____ 9. Abrasion is a type of chemical weathering.

_____ 10. Water can dissolve salt.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. _____ weathering creates new minerals that are stable at surface conditions.

12. When iron combines with oxygen, the result is reddish _____.

13. Weathering by the expansion and contraction of ice is known as _____.

14. The process that moves sediments is _____.

15. Chemical weathering increases as temperature _____ and precipitation _____.

Short Answer

Answer each question in the space provided.

16. Shiprock, in New Mexico, is the neck of an old volcano. Why does Shiprock stand above the surrounding desert?

17. Describe the climate type that causes the greatest rate of weathering. What factors cause the weathering rate to be high?

9.2 Soils

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Topsoil is dark in color because it
 - a. undergoes a lot of chemical weathering
 - b. has a large amount of organic material
 - c. is full of dark rocks
 - d. contains a lot of worms
2. In the eastern U.S., high rainfall and deciduous forests have soils called
 - a. pedocal
 - b. laterite
 - c. pedalfers
 - d. weathered soil
3. Adding organic material to soil
 - a. allows it to contain water and nutrients
 - b. decreases its fertility
 - c. increases its A horizon
 - d. often kills existing vegetation
4. Farmers terrace hillsides to
 - a. eliminate the soil's C horizon
 - b. increase the types of crops they can grow
 - c. increase the creation of soil
 - d. reduce erosion
5. Soil made from the bedrock that lies beneath it is
 - a. transported soil
 - b. eroded soil
 - c. residual soil
 - d. weathered soil

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Flat lands develop thicker soils than steeper slopes.
- _____ 7. Rainforests are rich ecosystems and their soils are rich in nutrients.
- _____ 8. All soils contain organic material.

- _____ 9. Chemical erosion is most common in deserts.
- _____ 10. Pedocal soils form in regions covered with grasslands and brush.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. _____ is the organic portion of soil.
12. The organic portion of soil is important because it provides the _____ needed for plant growth.
13. A, B & C are complete soil layers or soil _____.
14. The _____ is where leached soluble minerals and clays accumulate.
15. _____ contains humus, plant roots and living organisms.

Short Answer

Answer each question in the space provided.

16. Describe the effect of climate on soil formation.

17. What is humus? Why is it a very important part of most soils?

9.3 Weathering and Formation of Soil

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Where is ice wedging an important form of mechanical weathering?
 - in frozen ground beneath glaciers
 - where salt enters cracks in rock
 - where the temperature is often near freezing
 - in deserts where nights can be extremely cold
- Abrasion describes when
 - sediments settle in water
 - angular fragments break off a parent rock
 - plant roots grow into a crack
 - rocks bump against each other
- What is the most important agent of chemical weathering?
 - water
 - carbon dioxide
 - oxygen
 - acid rain
- Chemical weathering is enhanced when
 - carbon dissolves rock
 - carbon dioxide creates acids in the atmosphere
 - water breaks into ions that dissolve rock
 - none of these
- The climate that produces the lowest rate of weathering is
 - hot and wet
 - hot and dry
 - cold and wet
 - cold and dry
- To classify types of soil, soil scientists measure the
 - amount of humus
 - proportions of particles of different sizes
 - depth of the three soil horizons
 - none of these.
- What is the darkest layer of soil?
 - A Horizon

- b. B Horizon
 - c. C Horizon
 - d. none of these
8. What type of soil is found in tropical rainforests?
- a. pedocal
 - b. pedalfer
 - c. laterite
 - d. none of these
9. For soil to be a renewable resource, it must be
- a. kept exposed to weather and other natural processes
 - b. exposed to oxygen so it can undergo oxidation
 - c. protected from erosion
 - d. all of these
10. Soil scientists study the layers of soil that together are called
- a. residual soil
 - b. transported soil
 - c. soil horizons
 - d. a soil profile

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Plants increase chemical weathering by emitting water into the ground.
- _____ 12. If the temperature rises, the rate of chemical reactions increases by 10.
- _____ 13. The steeper the slope, the thicker a soil will be.
- _____ 14. Soil is a renewable resource.
- _____ 15. Soil is a complex mixture of different materials.
- _____ 16. Residual soils form in one place but have been transported to somewhere else.
- _____ 17. Water runs off soil because soil is not permeable.
- _____ 18. In the eastern U.S., soils are thin and nutrient-poor.
- _____ 19. Plowing along the contours of a field reduces soil erosion.
- _____ 20. Adding compost to the soil improves its fertility and its ability to hold water and nutrients.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. _____ is the process that changes solid rock into sediments.
22. _____ moves broken pieces of rock, large or small downslope.
23. Some types of rock can completely dissolve in the chemical substance called _____.
24. A location's _____ is determined by the temperatures and the amount of precipitation.
25. Plant roots obtain nutrients from the layer known as _____
26. The decayed remains of plant and animal life are called _____.
27. When soil contains a mixture of grain sizes, the soil is called _____.
28. _____ is a very fertile, dark brown soil common in many temperate areas of the eastern United States.

29. _____ soil is formed in drier temperate areas here grasslands and brush are the usual type of vegetation.
30. Adding organic material increases a soil's _____ .

Short Answer

Answer each question in the space provided.

31. List 3 factors that can lead to increased weathering and greater soil formation.

32. Explain how ice wedging works.

33. Why aren't laterite soils good for crops?

CHAPTER 10 MS Erosion and Deposition Assessments

Chapter Outline

- 10.1 WATER EROSION AND DEPOSITION
 - 10.2 WAVE EROSION AND DEPOSITION
 - 10.3 WIND EROSION AND DEPOSITION
 - 10.4 GLACIAL EROSION AND DEPOSITION
 - 10.5 EROSION AND DEPOSITION BY GRAVITY
 - 10.6 EROSION AND DEPOSITION
-

10.1 Water Erosion and Deposition

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Stream water
 - deposits, but does not erode
 - does not deposit or erode
 - erodes, but does not deposit
 - erodes and deposits
- As a stream exit a canyon into open land, the sediments form a(n) _____.
 - alluvial fan
 - fluvial fan
 - sediment fan
 - fan
- In a meander, the stream
 - erodes at the inside of the bend, and deposits at the outside of the bend.
 - deposits at the inside of the bend, and erodes at the outside of the bend.
 - erodes all along the meander, inside and outside.
 - deposits all along the meander, inside and outside.
- A sinkhole forms
 - when the roof of a lava tube collapses and fills with water.
 - when glaciers gouge out a hole in the ground that fills with water.
 - when the roof of a limestone cave collapses and fills with water.
 - when ice trapped in glacial sediment melts and makes a pond.
- A stalagmite rises up from the floor of a cave because
 - water comes through the cave's floor and up.
 - water drips down from the ceiling.
 - a column breaks into two features, one down from the ceiling, one up from the floor.
 - none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Streams usually flow from higher to lower elevations
- _____ 7. Meanders are curves in the stream's path.
- _____ 8. Mountain streams erode narrow, U-shaped valleys.

_____ 9. The steeper the slope, the faster the stream moves.

_____ 10. Weathering and erosion can turn tall mountains into hills and even plains.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Moving water below the surface is called _____.

12. Sediment that is bumped and pushed along the stream bottom is said to move by _____.

13. As a stream traverses flat land, it tends to _____.

14. A(n) _____ forms where a stream meets a large body of standing water.

15. Streams build natural levees during _____

Short Answer

Answer each question in the space provided.

16. Briefly describe the ways that streams carry sediments.

17. When does a stream erode? When does it deposit large sediments? When does it deposit small sediments?

10.2 Wave Erosion and Deposition

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. A wave is _____ that passes through a material.
 - a. speed
 - b. energy
 - c. motion
 - d. water
2. Beaches are formed when
 - a. waves deposit sediments along the coast
 - b. waves carry sediments to sea
 - c. humans erect sea walls
 - d. tides rise
3. Where wave action is quiet,
 - a. sea stacks form
 - b. erosion and deposition of sediment are equal
 - c. erosion increases
 - d. sediment is deposited
4. If waves erode the base of a cliff
 - a. the cliff will collapse
 - b. they will erode a wave-cut platform
 - c. they will create a sea arch
 - d. they will create a delta
5. A structure built perpendicular to a beach that traps sand is a
 - a. breakwater
 - b. seawall
 - c. groin
 - d. spit

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Sandy beaches are a great place to develop property.
- _____ 7. Beaches made mostly of cobbles have higher energy waves than sandy beaches.
- _____ 8. Waves continually move sand along the shore.

_____ 9. A spit is sand feature that is not connected to land.

_____ 10. Beach sediments can include mineral grains and shell fragments.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A _____ protects the shoreline from incoming waves.

12. When a sea arch collapses, all that is left is a(n) _____.

13. A(n) _____ is a long, narrow sandbar that forms along the shore.

14. A long narrow island of sand that is parallel to a shoreline is a(n) _____.

15. A _____ protects a beach and is built offshore.

Short Answer

Answer each question in the space provided.

16. Under what conditions to the largest waves form?

17. Briefly describe the erosional features produced by ocean waves.

10.3 Wind Erosion and Deposition

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Sand dunes
 - a. move in the direction the wind is blowing
 - b. move in the direction the wind is coming from
 - c. move randomly
 - d. are stationary
2. In a sandstorm, most sand
 - a. rolls along on the ground.
 - b. blows up very high; as much as 100 feet.
 - c. blows within a meter of the ground.
 - d. blows in spirals, like in a tornado.
3. Sandstorms are more common in dry climates because
 - a. desert sands are a good size for wind to pick up
 - b. plants in humid areas hold the sediments down
 - c. winds are stronger in deserts
 - d. none of these
4. A sand dune's shape is
 - a. the same on both sides
 - b. steeply sloping on the downwind side and gently sloping on the upwind side
 - c. gently sloping on the downwind side and steeply sloping on the upwind side
 - d. random in most cases
5. Loess deposits form
 - a. where sand-sized sediments are common
 - b. in oceans
 - c. in deserts
 - d. where fine sediments are present

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Wind can carry small cobbles, sand, silt and clay.
- _____ 7. Wind-blown sand may polish rock faces.
- _____ 8. Wind is a stronger erosional force than water.

_____ 9. Loess deposits are wastelands for crops and other vegetation.

_____ 10. Wind may drop sand around an obstacle.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Extremely fine-grained, wind-borne deposit of silts and clays; forms nearly vertical cliffs is called a(n) _____ - _____.

12. Wind lifts sand just above the surface and bounces it along by _____.

13. A rock or surface that has been sandblasted by blowing sand is a(n) _____.

14. Sand grains are pulled down a dune face by _____.

15. Sediment that is rolled along by wind is transported by _____.

Short Answer

Answer each question in the space provided.

16. How do sand dunes form?

17. Briefly describe the three ways that wind moves sand.

10.4 Glacial Erosion and Deposition

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Glaciers cover how much of the Earth's surface?
 - a. about 30%
 - b. less than 1%
 - c. over 40%
 - d. about 10%
2. Glaciers make valleys in the shape of what letter?
 - a. V
 - b. U
 - c. C
 - d. W
3. Long parallel grooves in the bedrock from glaciers indicate
 - a. the direction the glacier moved
 - b. the depth of the glacier
 - c. whether the glacier was continental or valley
 - d. that the glacier is advancing
4. Three or more cirques carved into the top of a mountain create a(n)
 - a. horn
 - b. hanging valley
 - c. arête
 - d. moraine
5. A lake that forms when a block of ice melts in glacial till is a(n)
 - a. kettle
 - b. varve
 - c. tarn
 - d. terminal lake

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. During the last ice age the entire continental United States was covered by ice.
- _____ 7. A continent that is covered by ice is said to be under an ice sheet.
- _____ 8. Glaciers erode the underlying rock by plucking.

- _____ 9. Drumlins point in the direction a glacier went.
- _____ 10. Antarctica is covered by an enormous number of valley glaciers.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Thick layer of sediment deposited under a glacier is called a(n) _____.
12. Greenland is a large landmass that is covered by a(n) _____.
13. A round hollow carved high on a mountain is a(n) _____.
14. _____ occurs glacial melt water seeps into cracks, freezes, breaks off pieces of bedrock, and then transported by the glacier.
15. Rocks at the bottom of a glacier wear away bedrock by the process of _____.

Short Answer

Answer each question in the space provided.

16. What is a valley glacier? List three features that indicate a valley glacier had been there.

17. What is a continental glacier? List three features that indicate a continental glacier had been there.

10.5 Erosion and Deposition by Gravity

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- The rate of erosion by gravity
 - is sudden and dramatic
 - is very slow over long periods of time
 - neither of these
 - both of these
- When a rock falls from a cliff face, the agent of erosion is usually
 - wind
 - water
 - gravity
 - glaciers
- Downhill creep
 - results in curved tree trunks
 - falls as a whole unit
 - leaves large scars in the hillside
 - cannot be noticed because it is so slow
- A slump is the sudden
 - fall of rock and soil down slope
 - flow of mud down slope
 - movement of a large block of rock and soil down slope
 - flow of volcanic ash and water down slope
- Mass movement may be caused when
 - droughts dry out the ground
 - a river undercuts a slope
 - the gravitational polarity reverses
 - none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Curved tree trunks are a sign of land creep.
- _____ 7. Undercutting can cause the ground to become unstable.
- _____ 8. Heavy rainfall makes ground more susceptible to landslides.

_____ 9. Landslides can cause earthquakes.

_____ 10. Landslides rarely cause much damage.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A large block that moves along a curved surface is a(n) _____.

12. The slowest mass movement is _____.

13. Rock and soil are pulled downhill by _____.

14. A hillside that has slumped may display a crescent-shaped _____.

15. Wet _____ beneath a slope may cause slump.

Short Answer

Answer each question in the space provided.

16. How might an earthquake cause a landslide and a landslide cause a tsunami?

17. How and where does creep happen?

10.6 Erosion and Deposition

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What is created when large sediments build a higher area around the edges of the stream channel?
 - a. meander
 - b. headwater
 - c. natural levees
 - d. none of the above
2. What is a curve in a stream channel called?
 - a. meander
 - b. headwater
 - c. natural levees
 - d. none of the above
3. A pointed icicle-like deposit that hangs from the ceiling of a cave is a(n)
 - a. icicle
 - b. calcite
 - c. stalagmite
 - d. stalactite
4. A lake formed from a cut-off meander is a(n)
 - a. meander lake
 - b. oxbow lake
 - c. flood lake
 - d. kettle lake
5. What is produced when waves erode through a cliff?
 - a. a wave-cut platform
 - b. a wave-cut cliff
 - c. an arch
 - d. a sea stack
6. What is a long, narrow pile of rocks built perpendicular to the shoreline in order to keep sand on the beach called?
 - a. breakwater
 - b. barrier island
 - c. sea wall
 - d. groin
7. Wind carries

- a. cobbles near the ground
 - b. sand in short hops
 - c. sand high in the air
 - d. all of these
8. Windblown silt and clay deposited layer upon layer over a large area is called
- a. sand
 - b. slipface
 - c. soil
 - d. loess
9. Glacial moraines are
- a. piles of glacial till left by a retreating glacier
 - b. ridges where cirques have carved on both sides
 - c. ridges of sand deposited by glacial meltwater
 - d. none of these
10. What are large ice sheets that cover relatively flat ground called?
- a. continental glaciers
 - b. alpine glaciers
 - c. valley glaciers
 - d. none of the above

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Flowing water does the work of both erosion and deposition.
- _____ 12. Faster streams can only carry smaller particles.
- _____ 13. A sinkhole forms if a cave's roof collapses.
- _____ 14. Barrier islands act as the first line of defense against storms if they are undeveloped.
- _____ 15. An ocean wave is energy traveling through water.
- _____ 16. Sand dunes form and remain in the same location over time.
- _____ 17. Loess deposits make very fertile soils in many regions.
- _____ 18. Plucking is the abrasion of rocks by glaciers.
- _____ 19. Geologists study moraines to determine when the next ice age will occur.
- _____ 20. Creep is most dramatic, sudden and dangerous example of earth materials moved by gravity.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. A flat level area surrounding the stream channel is called a _____.
22. A stream deposits its sediments in a wide triangular-shaped deposit called a _____.
23. A _____ is a pillar of rock eroded by waves.
24. Waves spread the sediments along a coastline to create a _____.
25. A _____ is formed as wind passes over a dune and sand cascades down the crest.
26. _____ is the erosional agent that is responsible for the most erosion.
27. Rocks are picked up by glaciers due to the process of _____.

28. Linear deposits of rock that were dumped by a glacier are called _____.
29. _____ are the very dramatic and sudden movement of earth downhill.
30. _____ is the extremely gradual movement of soil downhill.

Short Answer

Answer each question in the space provided.

31. What different features would you expect to find in a stream valley that once had a glacier and one that did not?

32. Briefly describe the depositional features produced by ocean waves.

33. How do sand dunes move?

34. Glacier National Park once had a lot of glaciers. What are a few features you would expect to see there? What kind of glaciers were there?

35. List the factors that cause a landslide to occur.

CHAPTER **11** MS Evidence About Earth's
Past Assessments

Chapter Outline

- 11.1 FOSSILS
 - 11.2 RELATIVE AGES OF ROCKS
 - 11.3 ABSOLUTE AGES OF ROCKS
 - 11.4 EVIDENCE ABOUT EARTH'S PAST
-

11.1 Fossils

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Examples of imprint fossils made by compression are
 - drawings on rock made by prehistoric humans
 - frozen remains of elephant-like mammoths
 - footprints and animal tracks
 - fossil leaves
- Fossilized insects have been found preserved in amber which is hardened
 - flower nectar
 - tree sap
 - wood
 - None of the above
- Fossilized stomach contents may indicate
 - the diet of the animal
 - the vegetation type in its habitat
 - whether an animal walked, swam or flew
 - a b
- An animal is more likely to a fossil if it:
 - is buried deeply in the ground
 - is left on the surface of the ground
 - does not contain bones or other hard body parts
 - all of the above are about equally likely to result in fossilization
- Marine fossils on the top of Mt. Everest indicate
 - sea level was once higher than the top of Mt. Everest
 - the fossils are not actually marine fossils, but just look like them
 - the rock at the top of Mt. Everest was once under water
 - someone put them up there as a trick.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. In the past, fossils inspired legends of monsters.
- _____ 7. Fossils in older rocks are more similar to animals that live today than fossils in younger rocks.
- _____ 8. Fossils form when remains are replaced by minerals.

_____ 9. Complete preservation is valuable because scientists can study the organism's DNA.

_____ 10. There are no plants in Antarctica so there are no plant fossils there.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Fossils that are left by an organisms but were not part of the organisms are _____ fossils.

12. If a shell dissolves and the hole is filled with rock, it forms a _____.

13. Ancient insects can be preserved in _____.

14. Fossils are good at telling the story of the history of _____ on Earth.

15. A fossil that can pinpoint a specific period of time is a(n) _____.

Short Answer

Answer each question in the space provided.

16. Why are there more fossils of clams than there are of jellyfish?

17. List and briefly describe the types of fossilization.

11.2 Relative Ages of Rocks

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. A rock's age compared to the ages of other rocks is called its
 - a. absolute age
 - b. confirmed age
 - c. nominal age
 - d. none of the above
2. The Law of Superposition states that
 - a. younger rocks are found below older rocks
 - b. older rocks are found below younger rocks
 - c. a rock that cuts across other rocks must be younger than the rock it cuts across
 - d. none of the above
3. The rock layers at the Grand Canyon
 - a. are the same on opposite sides of the river.
 - b. were formed in different ways on each side of the river.
 - c. are younger than the Colorado River in that region.
 - d. none of these.
4. A good key bed must be
 - a. found over a large area
 - b. similar to the rock units it is found with
 - c. a volcanic ash
 - d. all of these
5. A good index fossil
 - a. is found in a local area
 - b. is distinctive
 - c. existed for a long period of time
 - d. all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Fossil B is younger than Fossil A, but the rock layer containing Fossil B is beneath the rock layer containing Fossil A. In this section, the rock layers are overturned
- _____ 7. To help decipher the geologic history of a region, create a geologic time scale using the rock units you see in that region.

- _____ 8. James Hutton thought Earth was old because he saw how slowly geological processes work now.
- _____ 9. Cross-cutting relationships help geologists to determine the older and younger of two rock units.
- _____ 10. In the process of relative dating, scientists determine the exact age of a fossil or rock.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. In the Grand Canyon rock layers stretch over wide areas, which illustrates the principle of _____.
12. Large time periods of erosion can cause a(n) _____ in the rock record.
13. The Cretaceous Period ended at the same time as the _____ Era.
14. A distinctive layer of rock that can be recognized across a large area is a(n) _____.
15. Organisms that cannot adapt to a changing environment often become _____.

Short Answer

Answer each question in the space provided.

16. You see a sequence of rocks: A is on the bottom, B is in the center and C is on the top. Rock D cuts across layers A and B, but not C. What is the age sequence from oldest to youngest and why?

17. Describe three features of the geologic time scale.

11.3 Absolute Ages of Rocks

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- How much percent of the parent isotope remains after 2 half-lives?
 - 100%
 - 50%
 - 25%
 - 75%
- The half-life of a radioactive element is
 - half the estimated age of Earth's crust
 - the time it takes for half a parent isotope to decay into the daughter isotope
 - half the weight of the original radioactive element
 - the time it takes for half of a daughter isotope to decay into a parent isotope
- Carbon dating is useful for
 - igneous rocks
 - sedimentary rocks
 - organic materials
 - none of the above
- Potassium-argon is better for dating igneous rocks than carbon-14 because
 - the argon-39 half life is short
 - the potassium-40 half-life is long
 - no igneous rocks are young enough for carbon dating
 - all of these
- For radiometric dating of Earth's oldest rocks, it is best to use
 - uranium-238 to lead-206
 - potassium-argon
 - radiocarbon
 - none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Using radioactivity scientists are able to measure the relative age of some rocks.
- _____ 7. Radioactive isotopes gain or lose particles to become different elements.
- _____ 8. No one knows Earth's age because no isotopes are good for substances that old.

_____ 9. Carbon-14 loses an alpha particle, which is two protons and two electrons.

_____ 10. Plants take in carbon-14 during photosynthesis.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Rock A is older than Rock B is a(n) relative age. Rock A is 1.2 million years old is a(n) _____ age.

12. _____ is the emission of high-energy particles by unstable isotopes.

13. A(n) _____ is formed from the radioactive decay of a parent isotope.

14. Radioactive dating is used to determine the _____ of objects.

15. A crystal has 100 ions of uranium-235 when it forms; at the same time it has _____ ions of lead-207.

Short Answer

Answer each question in the space provided.

16. The half-life of carbon-14 is 5730 years. Describe what happens to the carbon-14 to carbon-12 ratio over eight half lives. Why is radiocarbon dating not useful for materials that are older than 50,000 years?

17. If you find a zircon crystal that has an age of 1 billion years in a sedimentary rock, what is the age of the sedimentary rock?

11.4 Evidence about Earth's Past

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which of the following are body fossils?
 - footprints
 - coprolites (fossil poo)
 - burrows
 - bones
- Which of the following can be used to identify a specific period of time?
 - body fossil
 - trace fossil
 - index fossil
 - amber
- (Hint: draw this out) Imagine Rock A and Rock B above it. A dike cuts across Rock A and Rock B. A fault cuts across Rock A, but not Rock B. From this we know that the
 - dike is older than Rock A but not Rock B
 - fault is the youngest geologic feature
 - dike is older than the fault
 - fault is older than the dike
- Scientists first suspected that a giant asteroid impact wiped out the dinosaurs
 - from a widespread key bed
 - when scientists located the giant crater
 - from large chunks of the asteroid discovered in Mexico
 - none of these
- Fossils are most useful in
 - igneous rocks
 - metamorphic rocks
 - sedimentary rocks
 - all three types of rocks
- Two rock layers that are far apart but have the same index fossil
 - are about the same age
 - formed in the same environment
 - are unrelated
 - none of these
- Fossils are useful because they can indicate the

- a. absolute age of the rock they are in
 - b. environment in which the rock was deposited
 - c. both of these
 - d. none of these
8. Which era do we live in?
- a. Holocene
 - b. Cenozoic
 - c. Quaternary
 - d. Phanerozoic
9. After seven half-lives
- a. an isotope pair is no longer useful
 - b. there is very little parent isotope left
 - c. there is very little measurable daughter isotope
 - d. none of these
10. A fossil human preserved for thousands of years in a glacier could indicate the _____ of earlier humans.
- a. DNA
 - b. diet
 - c. culture
 - d. all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Fossilization is very common.
- _____ 12. A cast is rock that fills in a fossil mold.
- _____ 13. The law of lateral continuity states that identical rock layers were once connected.
- _____ 14. Radioactivity allowed absolute ages to be put onto the events of the geological time scale.
- _____ 15. An unconformity can be thought of as a loss of time.
- _____ 16. Radioactivity was discovered in the middle of the 20th century.
- _____ 17. If a zircon crystal is 4.4 billion years old that means that the rock it is in is 4.4 billion years old.
- _____ 18. Radioactive isotopes are ideal for dating rocks because they are stable and unchanging.
- _____ 19. Different isotopes are used to date materials of different ages.
- _____ 20. Potassium-40 decays to argon-40.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. A _____ is any remains or traces of an ancient organism.
22. _____ is ancient tree sap.
23. The law of _____ states that the younger layers are at the top and the oldest are at the bottom.
24. The study of rock strata is called _____.
25. An intrusion is _____ in age than the rocks it cuts across.
26. We live in the _____ epoch.
27. Radiocarbon dating looks at the _____ of a parent isotope to a daughter isotope.

28. A rock is analyzed and found to have an equal number of parent and daughter isotopes so we know that _____ half-lives have passed.
29. Footprints and burrows are examples of _____ fossils.
30. _____ allows scientists to assign numbers to the breaks in the geologic time scale.

Short Answer

Answer each question in the space provided.

31. What are the limits on radiometric dating?

32. Why is fossilization rare?

33. Why is the geological time scale valuable?

CHAPTER **12**

MS Earth's History Assessments

Chapter Outline

- 12.1 THE ORIGIN OF EARTH
 - 12.2 EARLY EARTH
 - 12.3 HISTORY OF EARTH'S LIFE FORMS
 - 12.4 EARTH'S HISTORY
-

12.1 The Origin of Earth

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Before the Sun formed
 - a. temperature and pressure was extreme
 - b. radioactivity began
 - c. the planets formed
 - d. a supernova explosion occurred
2. The densest part of planet Earth is the
 - a. continental crust
 - b. oceanic crust
 - c. core
 - d. mantle
3. The Sun formed from
 - a. a spinning cloud of gas and dust
 - b. large dense planets pulled to the center by gravity
 - c. radioactive dust that ignited
 - d. a collision by two stars
4. When the solar system first formed
 - a. life forms were primitive
 - b. asteroid impacts were common
 - c. each planets was surrounded by a thick atmosphere
 - d. all of these
5. Gases in the first atmosphere came from
 - a. comet impact
 - b. volcanic outgassing
 - c. none of these
 - d. both of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The first atmosphere contained nitrogen, carbon dioxide, oxygen, and hydrogen.
- _____ 7. All of the stars in the Universe formed at around the same time as our Sun.
- _____ 8. The Sun, planets and other solar system objects formed at about the same time.

_____ 9. Early Earth was much like Earth today.

_____ 10. Before there was an ocean, there was water vapor in the atmosphere.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Earth's earliest atmosphere was missing the important gas _____.

12. The Sun became a star when the process of _____ began.

13. New stars form in a(n) _____.

14. _____ pulled rocks together to create planets.

15. Earth accreted from the solar nebula nearly _____ billion years ago.

Short Answer

Answer each question in the space provided.

16. Describe how Earth developed its internal structure.

17. How did the Moon form?

12.2 Early Earth

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Earth's first crust was probably made of
 - a. anorthosite
 - b. granite
 - c. basalt
 - d. peridotite
2. The earliest life on Earth
 - a. may have been wiped out more than once
 - b. got its nutrients from photosynthesis
 - c. passed genetic information using amino acids
 - d. all of these
3. How do cells make copies of themselves?
 - a. Nucleic acids pass on genetic information
 - b. Using their metabolism
 - c. By combining cells to become multi-cellular
 - d. None of these
4. Which of the following is true?
 - a. Prokaryotes and eukaryotes are both only single celled.
 - b. Prokaryotes are only single-celled; eukaryotes are only multicellular.
 - c. Prokaryotes are single-celled or multicellular; eukaryotes are only multicellular.
 - d. Prokaryotes and eukaryotes both are single-celled or multicellular.
5. Continents form when
 - a. seafloor spreading creates them
 - b. Earth melts and then re-solidifies
 - c. microcontinents or island arcs collide
 - d. none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Prokaryotes are more common than eukaryotes.
- _____ 7. DNA is short for deoxyribonucleic acid
- _____ 8. Rodinia was the first supercontinent.

_____ 9. Early in Earth history mantle convection was super fast.

_____ 10. The evolution from prokaryotes to eukaryotes to multi-cellular organisms took a few million years.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The important waste product of photosynthesis is _____.

12. When all the continents are together, the planet has a(n) _____.

13. _____ are molecules that pass genetic information to the next generation.

14. The first photosynthesizers were _____.

15. A eukaryote is different from a prokaryote because it has a _____.

Short Answer

Answer each question in the space provided.

16. What is the history of oxygen in the early atmosphere?

17. Why did the development of photosynthesis make Earth more hospitable for life to evolve?

12.3 History of Earth's Life Forms

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- When large numbers of organisms die out completely at the same time, it is a(n) _____.
 - mass evolution
 - mass extinction
 - punctuated equilibrium
 - punctuated evolution
- A species changes over time if
 - its environment changes
 - its members contain genetic variations
 - it survives
 - all of these
- The Cambrian is best known for
 - a huge mass extinction
 - the swamps that produced massive coal deposits
 - an incredible increase in the number of species
 - the origin of life
- Compared with their ancestors, horses today are
 - very similar
 - smaller than those ice age giants
 - adapted to a different environment
 - none of these
- At the end of the Paleozoic,
 - more than 95% of all species went extinct
 - a giant asteroid certainly struck Earth
 - dinosaurs and other land animals went extinct
 - none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Organisms alive today evolved from earlier life forms.
- _____ 7. Adaptations are inheritable characteristics that help an organism to survive.
- _____ 8. Mass extinctions often separate the time periods on the geologic time scale.

_____ 9. A mutation is almost always favorable.

_____ 10. Any animal can adapt to any environmental conditions.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. _____ are the special characteristics that help an organism to survive in its environment.

12. The change in the genetic makeup of species over time is known as _____.

13. A(n) _____ is a change an organism's genes that can be passed through generations.

14. The most common and diverse category of organisms during the Mesozoic was _____.

15. Human eyes can be blue, brown, green, hazel, and grey. This means that there are _____ in the trait of eye color.

Short Answer

Answer each question in the space provided.

16. How could an asteroid impact have caused the mass extinction at the end of the Cretaceous?

17. Why does Earth have such an incredible amount of biodiversity?

12.4 Earth's History

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- The Sun, Earth and Moon formed
 - at roughly the same time
 - over about 1 billion years
 - shortly after the Big Bang formed the Universe
 - over about 15 billion years
- Earth's first atmosphere was missing the important gas
 - nitrogen
 - hydrogen
 - carbon dioxide
 - oxygen
- The Sun shines from energy released when
 - helium breaks apart to form hydrogen
 - burning carbon
 - hydrogen fuses into helium
 - carbon fuses into carbon dioxide
- Why is ozone important?
 - It is needed for photosynthesis in phytoplankton.
 - It is needed for cellular respiration in animals.
 - It stops high energy ultraviolet radiation from reaching the surface.
 - none of these.
- Early Earth had lots of volcanoes and earthquakes because
 - asteroid impacts made the crust unstable
 - mantle convection was very rapid
 - the formation of the Moon made the crust unstable
 - life had not yet formed
- What stores genetic information and passes it onto the next generation?
 - amino acids
 - prokaryotes
 - nucleic acids
 - eukaryotes
- Evolution could not proceed without mutations because
 - there would not be enough genetic variation

- b. too many organisms would stay alive
 - c. organisms could not reproduce
 - d. none of these
8. Eukaryotes differ from prokaryotes because they
- a. are multicellular
 - b. use RNA instead of DNA as their replicator
 - c. contain organs
9. At the beginning of the Cambrian life could flourish because
- a. the climate changed from humid tropical to more moderate
 - b. shells evolved
 - c. an asteroid impact wiped earlier life out
 - d. all of these
10. The first fish
- a. were very similar to modern fish
 - b. had cartilaginous skeletons
 - c. had jaws for obtaining prey
 - d. all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Asteroids and comets brought all the water to the early Earth.
- _____ 12. Earliest Earth had no atmosphere because it was so hot gases were not stable.
- _____ 13. The Moon is a captured asteroid.
- _____ 14. The earliest cells were prokaryotes.
- _____ 15. Most comets and asteroids reside in belts around the Sun.
- _____ 16. Mutations are rarely valuable; they usually lead to an organism's death.
- _____ 17. The first continents were very similar to modern continents.
- _____ 18. The largest known mass extinction occurred at the end of the Cretaceous period.
- _____ 19. The dinosaurs went extinct 65 million years ago.
- _____ 20. Evolution proceeds at the same rate and from simpler to more advanced organisms always.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. Earth's _____ is the most dense layer of the planet.
22. The early Earth was hit frequently by _____.
23. Cells with a nucleus and organized structures are _____.
24. Volcanic eruptions and _____ supplied the gases for the early atmosphere.
25. Pangaea was the most recent _____.
26. _____ allows organisms to use sunlight and inorganic material to create food energy.
27. _____ have a cell membrane and get their nutrients directly from the water.
28. Earth formed about _____ years ago.
29. Scientists understand horse evolution from _____.

30. _____ are differences in a population that helps some members survive better than others.

Short Answer

Answer each question in the space provided.

31. What adaptations do organisms need for life on land?

32. How did the sun and planets form?

33. Explain the importance of adaptation to organisms.

CHAPTER **13**

MS Earth's Fresh Water Assessments

Chapter Outline

- 13.1 WATER ON EARTH
 - 13.2 SURFACE WATER
 - 13.3 GROUNDWATER
 - 13.4 EARTH'S FRESH WATER
-

13.1 Water on Earth

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Water is stored in
 - a. ice and snow
 - b. the atmosphere
 - c. lakes and streams
 - d. all of these
2. The largest amount of fresh water is contained in
 - a. ice caps, glaciers and inland seas
 - b. rivers and streams
 - c. the oceans
 - d. groundwater and soil moisture
3. The water cycle
 - a. begins and ends in the oceans.
 - b. has no beginning and has no end.
 - c. begins in the oceans and ends in groundwater aquifers.
 - d. begins in the atmosphere and ends in the oceans.
4. The energy for the water cycle comes from
 - a. radioactive decay
 - b. Earth's internal heat
 - c. the Sun
 - d. water when it changes state
5. In infiltration, water goes
 - a. through the ground
 - b. to the atmosphere by changing from liquid to gas
 - c. to the atmosphere through a plant
 - d. none of these.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Soil moisture is important for plants to grow.
- _____ 7. Water exists on Earth in all three states of matter.
- _____ 8. Water turns to gas through condensation.

_____ 9. The atoms that make up water molecules come together and break apart easily.

_____ 10. Cold air can hold less water than warm air so when air cools water may condense.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The movement of water between reservoirs is called the _____.

12. The gas phase of water is called _____.

13. Water is composed of one _____ and two _____ atoms.

14. Water changes from a liquid to a gas in the process of _____.

15. Precipitation that flows over the surface of the land is called _____.

Short Answer

Answer each question in the space provided.

16. Draw the water cycle and label the parts.

17. Describe two ways that water goes from the ground to the atmosphere.

13.2 Surface Water

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. The Great Lakes
 - a. contain 12% of the world's fresh surface water
 - b. are the world's largest freshwater lakes
 - c. are so cold, not much lives in them
 - d. formed when tectonic faults created basins
2. Lakes
 - a. are often the result of glaciation
 - b. are permanent features of a landscape
 - c. all become salty over time
 - d. none of these
3. A stream is
 - a. any water that flows downhill
 - b. a large amount of water that flows downhill
 - c. any water that flows downhill in a channel
 - d. any water in a channel or depression
4. A broad curve in a river is a
 - a. tributary
 - b. delta
 - c. floodplain
 - d. meander
5. Two water droplets fall on opposite sides of a divide. Those droplets will
 - a. eventually end up in the same ocean
 - b. eventually end up in two different oceans
 - c. rapidly end up in the same river
 - d. none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Streams usually begin with water from snow melt and possibly springs.
- _____ 7. A single stream will have a single water source.
- _____ 8. The Great Lakes are in basins carved by glaciers.

_____ 9. A stream is a small river.

_____ 10. A floodplain may be very wide and flat.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A body of freshwater smaller than a lake is a(n) _____.

12. A high occurrence of rain can cause a(n) _____ in a low lying area.

13. Two river basins are separated by a(n) _____.

14. The area where a river drops sediment at an ocean or lake is a(n) _____.

15. Land that becomes flooded is called a _____.

Short Answer

Answer each question in the space provided.

16. Why are wetlands important?

17. Draw and then describe these features of a stream: the source, tributaries, main river, and mouth.

13.3 Groundwater

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Groundwater usually
 - flows rapidly like an underground river
 - flows uphill or downhill depending on the topography
 - flows very slowly between grains of sediment
 - is stationary in an aquifer
- What are the two features of a good aquifer?
 - high porosity and high permeability
 - low porosity and high permeability
 - high porosity and low permeability
 - low porosity and low permeability
- During very wet times, the water table will
 - stay the same
 - rise
 - fall
 - hard to know; water tables are not affected by surface conditions.
- Water replenishes an aquifer from
 - glacial meltwater
 - rainfall
 - snow melt
 - all of these
- Geysers erupt because
 - pressure builds until the water breaks through
 - they have much more water than hot springs
 - the water needs to get downhill in a hurry
 - they are above a volcano that is about to erupt

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Water in hot springs is heated by hot magma.
- _____ 7. Aquifers are generally found at the same depths.
- _____ 8. Land use in an area can affect the amount of water that is available to enter groundwater.

_____ 9. A good aquifer has rock in it that is porous and permeable.

_____ 10. The bottom layer of an aquifer has impermeable rock.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Sediments or rock with a lot of holes has high _____.

12. If a lot of water is pumped from an aquifer the ground above it may _____.

13. Water that infiltrates through the ground enters an aquifer for the process of _____.

14. A(n) _____ is created where groundwater seeps or flows from rock or soil.

15. To reach groundwater, people must dig or drill a(n) _____.

Short Answer

Answer each question in the space provided.

16. What characteristics of an aquifer make it a good source of water for humans? What problems might there be with this aquifer?

17. What is the Ogallala Aquifer and why it is important?

13.4 Earth's Fresh Water

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What percent of the Earth's water is fresh water?
 - a. 4%
 - b. 3%
 - c. 2%
 - d. 1%
2. Clouds form when
 - a. liquid water condenses in the atmosphere
 - b. water evaporates to form water vapor
 - c. raindrops break apart in the atmosphere
 - d. none of these
3. With transpiration
 - a. plants take water from the soil and let water vapor out into the air
 - b. plants absorb water into their tissues
 - c. water vapor becomes liquid water in a tiny droplet
 - d. solid water becomes water vapor without first becoming a liquid
4. Freshwater contains
 - a. absolutely no salt
 - b. little or no salt
 - c. a noticeable amount of salt
 - d. an amount of salt up to the amount an ocean has
5. Humans get water from aquifers from
 - a. springs
 - b. drilling wells and waiting for the water to come up
 - c. drilling wells and pumping water
 - d. all of these
6. In a lake, water plants and algae live
 - a. at the bottom where they are rooted
 - b. throughout all water levels
 - c. near the top where sunlight penetrates
 - d. where animals cannot reach them
7. Which of the following is true about floods?
 - a. They only happen on the largest rivers.

- b. They only flood their floodplain.
 - c. They have only caused damage in the past few decades.
 - d. They are a natural event on many streams.
8. To get water, a well must
- a. reach the top of the water table
 - b. reach below the water table
 - c. reach below the impermeable layer
 - d. be drilled; the depth doesn't matter
9. The Ogallala aquifer
- a. is recharging faster than it is being pumped
 - b. has recharge equal to the amount being pumped
 - c. is being pumped must faster than recharge
 - d. will have water to support the farm belt forever.
10. If a lot of water is pumped from aquifer but the water table stays at the same level,
- a. the aquifer is very full of water.
 - b. the extra recharge is equal to the increase in pumping
 - c. the water table will soon go down
 - d. none of these.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. The water cycle is a one way process.
- _____ 12. Rivers are the largest type of streams.
- _____ 13. Lakes are small bodies of water that have no outlet.
- _____ 14. The mouth of a stream is where it originates.
- _____ 15. Lakes do not ever disappear.
- _____ 16. Wetlands are found inland and at the edges of seas.
- _____ 17. Geysers always erupt at regular intervals.
- _____ 18. Withdrawing too much water from aquifers may the surface to sink.
- _____ 19. Nothing can live in a hot springs for very long.
- _____ 20. Each water molecule on Earth has been around for billions of years.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. The movement of water around Earth's surface is the _____ cycle.
22. The top of water level in a layer of groundwater is called a(n) _____.
23. Water changes from a liquid to a gas by _____.
24. A stream that overflows its banks is in _____.
25. The smaller of two streams is a _____ of the larger stream.
26. The highest point between two streams is called a(n) _____.
27. _____ are fragile systems that are sensitive to the amounts and quality of water.
28. A stream flows in a _____

29. A _____ is a wetland that is under water.

30. Precipitation that soaks down into the ground is undergoing _____.

Short Answer

Answer each question in the space provided.

31. Draw the water cycle. Label the reservoirs and processes.

32. Describe the features of a groundwater aquifer.

33. Crater Lake is found in the caldera of an old volcano. How might this lake have formed?

CHAPTER **14**

MS Earth's Oceans Assessments

Chapter Outline

- 14.1 INTRODUCTION TO THE OCEANS
 - 14.2 OCEAN MOVEMENTS
 - 14.3 THE SEAFLOOR
 - 14.4 OCEAN LIFE
 - 14.5 EARTH'S OCEANS
-

14.1 Introduction to the Oceans

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What percent of the Earth is covered in salt water oceans?
 - a. 82%
 - b. 71%
 - c. 65%
 - d. 49%
2. Coastal areas have a milder climate than inland areas because
 - a. water does not change temperature as rapidly as land
 - b. currents move warm and cold water around
 - c. breezes blow between land and sea
 - d. all of these
3. Compared with shallow water, deeper water is
 - a. saltier and colder
 - b. saltier and warmer
 - c. less salty and colder
 - d. less salty and warmer
4. Salt in the oceans comes from
 - a. deep-sea hydrothermal vents
 - b. near shore salt deposits
 - c. river inflow
 - d. mid-ocean ridges
5. The ocean zone that is always covered by water, but is fairly shallow in depth is the
 - a. intertidal zone
 - b. oceanic zone
 - c. photic zone
 - d. neritic zone

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The Dead Sea is extremely saline due to high evaporation.
- _____ 7. Earth's oceans have always had the same configuration.
- _____ 8. Most nutrients in the ocean are washed in from the land.

_____ 9. About 250 million years ago, there was one world ocean known as Pansea.

_____ 10. The climate of inland areas is affected by oceans.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Between high and low tide is the _____ zone.

12. Photosynthesizing organisms must live in the _____ zone.

13. The most common salt in the ocean is the compound _____

14. The deepest trench is in the _____ Ocean.

15. For early oceans to form, there must have been the gas _____ in the atmosphere.

Short Answer

Answer each question in the space provided.

16. Why is the sea salty?

17. Draw a diagram of the ocean and label the major horizontal and vertical divisions.

14.2 Ocean Movements

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What is the primary cause of the tides?
 - a. Earth's rotation
 - b. The moon's gravity
 - c. the Sun's gravity
 - d. wind
2. Surface currents
 - a. are caused by Coriolis effect
 - b. flow in a counterclockwise direction in the Northern Hemisphere
 - c. are caused by winds that may have blown far from the current
 - d. none of these
3. Where is wave energy the greatest?
 - a. at the surface
 - b. at the ocean floor
 - c. half way between the surface and the ocean floor
 - d. None of the above
4. A wave breaks because
 - a. the base has friction with the bottom
 - b. it becomes too tall to be supported by its base
 - c. it reaches the shore
 - d. all of these
5. Upwelling brings
 - a. warm water to the surface so there are coral reefs
 - b. cold water east to west across the Pacific
 - c. nutrients to the surface so there is a lot of life
 - d. none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The greatest cause of tides is the Sun.
- _____ 7. Tides are waves: high tide is the crest and low tide is the trough.
- _____ 8. A wave is a transfer of energy that initially began with wind.

_____ 9. The first sign of a tsunami is coming is high water moving fast across the ocean.

_____ 10. Coriolis effect is caused by Earth's rotation.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Surface currents deliver _____ around the planet.

12. Tides with the smallest tidal range are called _____ tides.

13. _____ currents are pushed along by surface winds.

14. The height difference between adjacent high and low tides is known as the _____.

15. The deepest water probably is coldest and saltiest so it has the highest _____.

Short Answer

Answer each question in the space provided.

16. What is the Gulf Stream? Why is it important?

17. Where are the Earth-Moon-Sun during spring tides? Where they during neap tides? What are spring and neap tides?

14.3 The Seafloor

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which are not found in the ocean?
 - fish
 - oil gas
 - valuable minerals
 - all are found in the oceans
- The gently sloping seafloor just off the shoreline is called the
 - oceanic trench
 - mid-ocean ridge
 - continental shelf
 - coastal slope
- It is difficult to learn about the oceans because they
 - are salty and cold
 - are cold and dark
 - have intense currents that are hard to battle
 - none of these
- A volcano on the seafloor may
 - be fairly small
 - be active or extinct
 - rise above sea level
 - all of these
- Minerals form in the oceans at
 - hot water vents in the seafloor
 - igneous intrusions
 - clay settling sites
 - all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. To understand ocean chemistry, scientist need samples of seawater from different depths.
- _____ 7. It is possible for a submersible to take scientists to depths of up to one mile for observations.
- _____ 8. The seafloor is mined for many types of metals.

_____ 9. Advanced scuba divers can dive to the seafloor at a mid-ocean ridge.

_____ 10. Scientists look for medicines in some marine creatures.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A mountain on the seafloor that does not rise above sea level is a(n) _____

12. A vehicle that can visit the deepest ocean floor without humans aboard is called a(n) _____ vehicle.

13. The Gulf of Mexico in 2010 was damaged by the extraction of _____ .

14. The deep, flat part of the seafloor is called a(n) _____.

15. Nodules on the seafloor may contain valuable _____.

Short Answer

Answer each question in the space provided.

16. How can sonar be used to create a map of the seafloor?

17. What problems face companies trying to get non-living resources from the oceans?

14.4 Ocean Life

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What type of organism found in the ocean floats along with the current?
 - a. plankton
 - b. whales
 - c. jellyfish
 - d. squids
2. What part of a fish's body extracts oxygen from the water?
 - a. bladder
 - b. gills
 - c. spleen
 - d. lungs
3. Benthic organisms that live in the intertidal must do which of the following
 - a. have hard shells
 - b. have strong attachments
 - c. burrow into sediment
 - d. any of these
4. Coral reefs
 - a. are found off of nearly all shorelines
 - b. are rocky outcroppings with little other life
 - c. have a tremendous amount of biodiversity
 - d. none of these
5. Life in the deepest ocean is
 - a. non-existent
 - b. abundant
 - c. about the same as at the surface
 - d. scarce

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Nekton must live in the photic zone.
- _____ 7. Zooplankton may include larvae of large animals.
- _____ 8. Plankton are organisms that can swim against the current.

_____ 9. There is no photosynthesis at deep-sea vents because there is no light.

_____ 10. If an ocean plant can photosynthesize, light must be available to the plant.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. _____ must float in the photic zone to photosynthesize sunlight.

12. Organisms that break down chemicals to make food engage in _____.

13. A worm that burrows into ocean sediments is an example of an organism classified as _____.

14. Organisms that can swim are _____.

15. Dead organisms are broken down into nutrients by _____.

Short Answer

Answer each question in the space provided.

16. Draw and label a marine food web.

17. What are plankton? What are the two main types?

14.5 Earth's Oceans

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- The ocean is salty where
 - evaporation is high; fresh water mixing is high
 - evaporation is high; fresh water mixing is low
 - evaporation is low; fresh water mixing is high
 - evaporation is low; fresh water mixing is low
- Organisms living between the high and low tide marks
 - are usually adapted to land environments
 - could easily move out to sea
 - must have adaptations to live on land and in the sea
 - none of these
- In the zone below where sunlight penetrates, there is
 - no chemosynthesis
 - no photosynthesis
 - no well-developed food web
 - all of these
- Which zone makes up the majority of the ocean?
 - deep sea
 - photic zone
 - aphotic zone
 - none of these
- Upwelling is important because
 - organisms depend on the nutrient-rich water from the deep
 - cold water goes down to the seafloor and warm water comes up to the surface
 - it drives surface ocean currents
 - it drives deep ocean currents
- Which tides have the smallest tidal range?
 - high tide
 - low tide
 - spring tide
 - neap tide
- To build a large ocean wave, wind must blow
 - at high speed

- b. over a large distance
 - c. for a long period of time
 - d. all of these
8. At the continental slope the
- a. continent slopes gently toward the seafloor
 - b. continent drops off steeply to the seafloor
 - c. beach slopes toward the tidal zone
 - d. abyssal plain slopes toward a trench
9. At the new and full moon, the tides are
- a. at their highest and lowest
 - b. more even in height
 - c. higher in one of the high tides that day than in the other
 - d. random
10. Nekton are
- a. animals that float in the currents
 - b. plants and animals that float in the currents
 - c. plants and animals that live on the seafloor
 - d. animals that can swim in the currents

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. About 71% of the Earth's surface is covered in water.
- _____ 12. The average salinity of seawater is 3.5%.
- _____ 13. Tsunamis travel across the sea as giant waves, but do most of their damage when they hit shore.
- _____ 14. Spring tides occur only in the spring.
- _____ 15. Downwelling occurs where cold dense water sinks.
- _____ 16. Organisms at hot vents get energy from chemicals.
- _____ 17. There is one high tide and one low tide a day in most locations.
- _____ 18. Coral reefs have a tremendous diversity of organisms.
- _____ 19. Photosynthetic life has been found near hydrothermal vents.
- _____ 20. Nodules on the seafloor contain valuable minerals.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. _____ ocean currents move water of different temperature around the planet.
22. An ecosystem with high _____ has a large number of species inhabiting it.
23. Tides are produced the Sun and Moon's _____ pulls on Earth.
24. A volcano that is covered by seawater is a(n) _____.
25. Earth's rotation affects the direction of winds and currents is a phenomenon called _____.
26. The mountain range that runs through the world's oceans is called a _____.
27. The _____ is a warm water current in the Atlantic ocean that warms the northern regions.
28. A _____ is a manned vehicle that can visit the bottom of the ocean.

29. For tubeworms, which live at/in _____, bacteria make food and the worm protects the bacteria in its tube.

30. To make a map of the seafloor, scientists use _____ waves.

Short Answer

Answer each question in the space provided.

31. How are two high tides each day created?

32. What happens in the North Atlantic that drives deep ocean circulation?

33. About photosynthesis and chemosynthesis: How are they the same? How are they different?

CHAPTER

15

MS Earth's Atmosphere Assessments

Chapter Outline

- 15.1 THE ATMOSPHERE
 - 15.2 ENERGY IN THE ATMOSPHERE
 - 15.3 ATMOSPHERIC LAYERS
 - 15.4 AIR MOVEMENT
 - 15.5 EARTH'S ATMOSPHERE
-

15.1 The Atmosphere

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What are the two most common gases in the atmosphere?
 - a. hydrogen and oxygen
 - b. nitrogen and water vapor
 - c. hydrogen and nitrogen
 - d. oxygen and nitrogen
2. The most important gas(es) for life are
 - a. nitrogen and oxygen
 - b. oxygen and carbon dioxide
 - c. oxygen
 - d. nitrogen, oxygen and carbon dioxide
3. Photosynthesis
 - a. uses carbon dioxide and creates oxygen
 - b. uses oxygen and creates carbon dioxide
 - c. uses carbon dioxide and oxygen and creates food energy
 - d. uses food energy and creates carbon dioxide and oxygen.
4. On the Moon
 - a. birds couldn't breathe
 - b. birds couldn't fly
 - c. if birds said "cheep" they wouldn't be heard
 - d. all of these
5. An increase in air pollutant particles
 - a. would have no effect on the number of raindrops
 - b. would have an unknown effect on the number of raindrops
 - c. could produce more raindrops
 - d. might produce fewer raindrops

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The atmosphere protects Earth from harmful solar rays.
- _____ 7. Sound waves travel rapidly through empty space.
- _____ 8. Carbon dioxide is abundant in the atmosphere.

- _____ 9. Ozone is a type of oxygen.
- _____ 10. Weather on the Moon is always stormy.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. As you increase in altitude, air pressure _____ .
12. As oceans and lakes evaporate, _____ accumulates in the atmosphere.
13. As air rises, water vapor forms _____ .
14. Near the surface, as air pressure rises, air density _____ .
15. Molecules are packed more tightly together in air with higher _____ .

Short Answer

Answer each question in the space provided.

16. On top of Old Smokey, you drink a bottle of water then close the lid. Back at sea level, you find that the bottle has collapsed. Explain what has happened.

17. Often when there is cloud cover, daytime temperatures are lower and nighttime temperatures are higher. Why?

15.2 Energy in the Atmosphere

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- When heat is transferred by the movement of electromagnetic waves it is called
 - convection
 - conduction
 - radiation
 - none of these
- Electromagnetic spectrum
 - is all visible to humans
 - has the highest energy at the short wavelengths.
 - has the highest energy in the infrared.
 - is only able to travel through material
- The vertical movement of air due to the uneven heating is called
 - convection
 - reflection
 - conduction
 - refraction
- Wavelengths that are short and very high energy are
 - infrared
 - radio waves
 - ultraviolet
 - visible light
- Incoming solar radiation may
 - reflect back into space
 - be absorbed by clouds
 - strike the ground
 - all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Energy cannot be created or destroyed.
- _____ 7. Two important greenhouse gases are carbon dioxide and water vapor.
- _____ 8. Sunlight hits Earth surface, then heat travels by conduction back into the atmosphere.

_____ 9. Deep purple is part of the ultraviolet spectrum.

_____ 10. Burning wood releases chemical energy.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Light, radio waves and gamma rays are examples of _____.

12. The Sun's rays strike Earth's surface most directly at _____.

13. Infrared energy is also known as _____.

14. The ability to do work is _____.

15. Energy from the sun travels in packets called _____.

Short Answer

Answer each question in the space provided.

16. Describe the three ways that energy can move.

17. What causes greenhouse effect and why is it important?

15.3 Atmospheric Layers

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Days with inversions may have high pollution because
 - they are cold and people use more fossil fuels
 - the air is stable and more pollutants can get trapped
 - they are warm and the air conditioners are running
 - none of these
- In the stratosphere, temperature _____ with altitude because _____.
 - decreases; heat radiates from the ground
 - decreases; heat comes from the sun
 - increases; heat comes from the sun
 - increases; heat radiates from the ground
- The ozone layer protects life on Earth from
 - the Sun's high energy ultraviolet radiation
 - global warming
 - the Sun's intense heat
 - none of these
- An inversion
 - has warm air above cold air
 - has cold air above warm air
 - is unstable
 - none of these
- In the thermosphere, the air feels very _____ because _____.
 - cold; there are so few gas molecules
 - hot; it is close to the sun
 - hot; it is above most of the atmosphere
 - b c

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The International Space Station orbits Earth in the stratosphere.
- _____ 7. The temperature gradient of each layer within the atmosphere is the same.
- _____ 8. Gas molecules in the thermosphere are very energetic, but the air still feels cold.

_____ 9. All weather takes place in the troposphere.

_____ 10. Earth's atmosphere is divided into five major layers.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The _____ occurs when ions in the thermosphere become energized.

12. Three-fourths of all gas molecules are found in the _____ .

13. There is so little gravity that gas molecules may float off into space from the _____.

14. Mixing between the troposphere and stratosphere is prevented by the _____ .

15. A rock that burns as it falls through the mesosphere is a(n) _____.

Short Answer

Answer each question in the space provided.

16. What is the temperature gradient of the troposphere and why? Is air in the troposphere stable?

17. How does the ozone layer absorb high-energy UV radiation? Why is this important?

15.4 Air Movement

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. A low pressure zone forms where
 - a. warm air rises
 - b. cold air rises
 - c. water evaporates
 - d. cold and warm air rapidly mix
2. Winds blow when
 - a. warm air rises.
 - b. cool air sinks.
 - c. air flows from high to low pressure.
 - d. air flows from low to high pressure.
3. Rain is most likely to fall as an air mass
 - a. descends down a mountain range.
 - b. rises up a mountain range.
 - c. rises over the desert.
 - d. none of these
4. The time for an airplane to fly between San Francisco and New York relative to NY to SF is
 - a. greater due to the westerly winds.
 - b. less due to the westerly winds.
 - c. greater due to the easterly winds.
 - d. less due to the easterly winds.
5. Precipitation is high
 - a. in low pressure areas where air is sinking.
 - b. in high pressure areas where air is rising.
 - c. in high pressure areas where air is sinking.
 - d. in low pressure areas where air is rising.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The westerly winds travel toward the west.
- _____ 7. Cool air sinking creates a high pressure zone at the ground.
- _____ 8. Wind is created by air that moves vertically between high and low pressure zones.

_____ 9. Walking on the beach in San Diego in December, one would likely feel a strong sea breeze coming off the ocean.

_____ 10. Winds blow northeast to southwest or the reverse due to Coriolis Effect.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The basis for much of this chapter is that warm air _____ and cool air _____.

12. Wind blows from _____ pressure zones to _____ pressure zones.

13. Most air movement takes place in the layer called the _____.

14. Wind along the ground is the bottom of a _____.

15. Fast flowing air that circles the planet from west to east is called a(n) _____.

Short Answer

Answer each question in the space provided.

16. Draw a picture of the atmospheric circulation cells with arrows for the direction the air is moving. Label where the high and low pressure zones are located.

17. How do sea breezes form? How do land breezes form?

15.5 Earth's Atmosphere

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Energy can
 - do work
 - change form
 - move from place to place
 - all of these
- What is the force of air weighing down over a unit of area called?
 - air pressure
 - air density
 - air temperature
 - none of these
- Which layer of the atmosphere contains the ozone layer?
 - thermosphere
 - mesosphere
 - stratosphere
 - troposphere
- Land breezes blow when
 - warmer ocean air flows over land
 - warmer land air flows over the ocean
 - cooler ocean air flows over land
 - cooler land air flows over the ocean
- The temperature gradient of the troposphere means that
 - the troposphere is very unstable
 - the troposphere is extremely stable
 - the troposphere is prone to inversions
 - the troposphere is prone to rising into the stratosphere
- The global winds are created by
 - convection cells in the troposphere
 - Coriolis effect
 - monsoons
 - the location of the jet stream
- Air circulates in the troposphere because
 - it is warmer at the top due to solar radiation

- b. surface features cause air to move in different directions
 - c. dense air from the stratosphere weighs down on it
 - d. Earth's surface is heated unevenly
8. In the ozone layer, ozone breaks apart into
- a. oxygen atoms
 - b. oxygen molecules and carbon dioxide molecules
 - c. an oxygen atom and an oxygen molecule
 - d. a carbon atom, an oxygen atom and an oxygen molecule
9. The stratosphere is
- a. the highest layer of the atmosphere
 - b. cooler closer to Earth
 - c. the layer with the most air mixing
 - d. all of these
10. The polar regions get _____ solar energy over a year because
- a. the most; they receive 24 hours of daylight during the summer
 - b. the least; sun comes in at an angle or not at all
 - c. a medium amount; they receive lots in summer and none in winter
 - d. none of these; the polar regions get the same as the rest of the planet

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Photosynthesis is the process through which CO₂ is created and energy is released.
- _____ 12. High temperature particles vibrate faster than low temperature particles.
- _____ 13. Air mixes freely between the troposphere and the stratosphere.
- _____ 14. Humans can live for months at a time in the thermosphere.
- _____ 15. In the outer atmosphere, gas molecules have a lot of energy, but there are hardly any of them.
- _____ 16. When ozone in the ozone layer breaks apart it cools the surrounding atmosphere.
- _____ 17. The trade winds are local winds found in tropical regions.
- _____ 18. Gas molecules in the exosphere may escape Earth's gravity.
- _____ 19. Heat is held in the atmosphere by greenhouse gases.
- _____ 20. During the aurora energized ions emit light.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. Air movement takes place in the _____.
22. Forms of energy include heat and _____.
23. In a _____ cell, dense air sinks causing cool temperatures.
24. _____ waves have the longest wavelengths in the electromagnetic spectrum.
25. We feel _____ energy as heat.
26. Human actions have increased the levels of _____ gases in the atmosphere.
27. A bright ball streaking across the sky is a(n) _____.
28. Excited ions in the mesosphere can create waves of brilliant colors called the _____.

29. _____ winds are large scale versions of land and sea breezes.

30. Winds that blow over a limited area and that are influenced by local geography are _____ .

Short Answer

Answer each question in the space provided.

31. What is a temperature inversion? Why are they more common in winter?

32. What are monsoons and what causes the monsoons in India?

33. What are the westerly winds? Why do they move in the direction that they move?

CHAPTER **16** MS Weather Assessments

Chapter Outline

16.1 WEATHER AND ATMOSPHERIC WATER

16.2 CHANGING WEATHER

16.3 STORMS

16.4 WEATHER FORECASTING

16.5 WEATHER

16.1 Weather and Atmospheric Water

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Clouds have a big influence on weather by
 - preventing solar radiation from reaching the ground
 - absorbing warmth that is re-emitted from the ground
 - being a source of precipitation
 - all of the above
- Local weather depends on which of the following?
 - air temperature
 - humidity
 - wind speed and direction
 - all of the above
- When warm moist air rises it eventually
 - cools and reaches its dew point.
 - becomes hot and begins to rain.
 - cools and becomes able to hold more water vapor.
 - none of these.
- If the weather report says there is 90% humidity, it means that the air
 - has 10% as much water vapor as it could hold.
 - has 90% as much water vapor as it could hold.
 - is 90% water vapor.
 - is 10% water vapor.
- Clouds form when
 - humidity decreases, but air temperature stays the same.
 - air temperature increases, but humidity stays the same.
 - the air reaches its dew point.
 - all of these.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Clouds grow tall because of strong upward vertical air currents.
- _____ 7. A particular location's weather does not depend on wind direction.
- _____ 8. The recipe for a cloud is water vapor, particulates and the right temperature.

_____ 9. An 85-degree day may be pleasant in a dry location but hot in a humid location.

_____ 10. Weather is caused by the sun's even heating of Earth's surface.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The _____ occurs when the air has 100% relative humidity.

12. _____ clouds, like cirrus, are made of ice crystals.

13. Air that is _____ in temperature can hold more water vapor than air that is _____ in temperature.

14. Precipitation falls when humidity reaches _____.

15. If rain hits a layer of freezing air near the ground it becomes _____.

Short Answer

Answer each question in the space provided.

16. How do clouds influence weather?

17. How does a hailstone form? When does it fall?

16.2 Changing Weather

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. A warm front occurs when
 - a. a cold air mass slides over a warm air mass
 - b. a warm air mass slides over a cold air mass
 - c. two warm air masses meet
 - d. two cold air masses meet
2. A cold front in winter will produce
 - a. thunderstorms and tornadoes
 - b. strong rain
 - c. cold temperatures and heavy snow
 - d. cold temperatures but clear or slightly cloudy skies
3. Air masses do not form in temperate zones because
 - a. the air is too unstable
 - b. the area is not hot or cold enough to affect the air
 - c. there is too much rain in the mid-latitudes
 - d. none of these
4. After a cold front passes, the cold air mass is over you and you can expect
 - a. thunderstorms or snow showers
 - b. a squall line passing overhead
 - c. cold weather and clear or partly cloudy skies
 - d. tornadoes and thunderstorms
5. Thunderstorms tend to form
 - a. in summer and autumn
 - b. in autumn and winter
 - c. in winter and spring
 - d. in spring and summer

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Fronts are always moving.
- _____ 7. An air mass is a batch of air that has very similar temperature and humidity.
- _____ 8. Air masses generally form over a relatively small area.

_____ 9. A front is the meeting of two air masses that have different densities and do not easily mix.

_____ 10. An occluded front has three air masses: cold, warm, then cold.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A warm air mass will replace a cold air mass in a _____.

12. A front occurs that the meeting of one _____ with another.

13. The one air mass that forms within North America is cT, which stands for _____.

14. Most stormy weather occurs at _____.

15. Air masses do not move at a(n) _____.

Short Answer

Answer each question in the space provided.

16. How and where do air masses form?

17. Imagine that it is a winter day and a warm front comes over you. What is the sequence of clouds and weather that you can observe?

16.3 Storms

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- The categories of the Saffir-Simpson Hurricane Scale are divided by
 - the amount of precipitation
 - the wind speed
 - the amount of precipitation and the wind speed
 - the amount of damage done
- Which of the following is true?
 - You hear thunder before you see lightning.
 - You hear thunder and see lightning at the same time.
 - You see lightning before you hear thunder.
 - The arrival time of sound and light waves is random.
- Tornadoes are common in the late spring when
 - warm wet air from the south meets cold dry air from the north.
 - hurricanes come off of the Atlantic and onto land.
 - nor-easters come off of the Atlantic and onto land.
 - none of these
- The eye of a hurricane is relatively calm because
 - it is located at the end of the storm
 - there is a lot of precipitation so air motion is downward
 - it is a high pressure
 - none of these
- Frigid air warms and collects moisture over the Great Lakes, so that downwind the air
 - warms the region and rain falls.
 - warms the region and skies clear.
 - cools and creates a nor'easter.
 - cools and drops lots of snow.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Lightning never strikes the same place twice.
- _____ 7. Cumulonimbus clouds are created by strong downdrafts.
- _____ 8. The states of Texas, Oklahoma, Kansas, Nebraska and South Dakota are the hotspots for tornadoes.

_____ 9. Lightning heats the air so that it expands explosively.

_____ 10. If there were no thunderstorms in Kansas, there would be no tornadoes there either.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. _____ are high-energy, narrow storms that lose energy as they move along the ground.

12. A _____ is a storm that rotates around a low pressure center.

13. High water that causes coastal flooding in a hurricane is called _____.

14. A snow storm with high winds is a(n) _____.

15. When the air temperature feels lower than it is due to moving air there is high _____.

Short Answer

Answer each question in the space provided.

16. What causes thunderheads?

17. What powers a hurricane and what causes it to die?

16.4 Weather Forecasting

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What instrument measures atmospheric pressure?
 - a. thermometer
 - b. barometer
 - c. scale
 - d. sundial
2. What will probably happen if barometric pressure rises?
 - a. a storm is on its way
 - b. conditions will remain the same as they are
 - c. the skies will clear
 - d. its not possible to say
3. To get a picture of a storm, meteorologists use
 - a. satellites
 - b. weather maps
 - c. radar
 - d. none of these
4. To create a weather model, scientists
 - a. compile weather data
 - b. put the data into a computer
 - c. analyze the data
 - d. all of these
5. Humidity is measured by a
 - a. anemometer
 - b. rain gauge
 - c. hydrometer
 - d. none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. On a weather map, a curved red line with triangles indicates a warm front.
- _____ 7. Weather predictions are right more often than a guess would be.
- _____ 8. In a barometer, the atmosphere pressing down makes the mercury level go down.

_____ 9. All weather data is collected using computerized devices.

_____ 10. Weather stations collect data on land or at sea.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Scientists who forecast weather are _____.

12. On the warm side of the 0°C (32°F) isotherm, the precipitation would be _____.

13. To monitor large scale weather systems, it is best to use a(n) _____.

14. A(n) _____ measures wind speed.

15. _____ uses the reflection of radio waves to see precipitation falling.

Short Answer

Answer each question in the space provided.

16. What is the link between atmospheric pressure and weather predictions?

17. Why are weather predictions so much more detailed and accurate than they were 50 years ago?

16.5 Weather

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- In the Northern Hemisphere, the general direction of the flow of the jet stream is toward the
 - north
 - south
 - east
 - west
- The layer of the atmosphere in which weather change occurs is the
 - mesosphere
 - troposphere
 - thermosphere
 - stratosphere
- Which type of front occurs when the air masses do NOT move?
 - cold
 - warm
 - stationary
 - occluded
- Which of the following is a product of thunderstorms?
 - tornadoes
 - hurricanes
 - typhoons
 - cyclones
- The Fujita Scale measures
 - tornado intensity
 - hurricane wind speed
 - hurricane wind damage
 - none of these
- Heat transfer that takes place when fluids (gases and liquids) are unevenly heated is called
 - reflection
 - conduction
 - radiation
 - convection
- A hurricane that is a 4 on the Saffir-Simpson scale is
 - stronger than a 3

- b. the strongest there is
 - c. more devastating than a tornado that is a 4 on the Fujita scale
 - d. none of these
8. Which of the following instruments measures air pressure?
- a. tachometer
 - b. radiosonde
 - c. thermometer
 - d. barometer
9. What clouds are towering clouds with anvil heads that bring thunderstorms?
- a. Nimbostratus
 - b. Cirrocumulus
 - c. Cumulonimbus
 - d. Cirrus
10. The eye of a hurricane is a
- a. high pressure cell
 - b. low pressure cell
 - c. tropical depression
 - d. tropical cyclone

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Radiation is the transfer of energy from one object to another through electromagnetic waves.
- _____ 12. Weather maps depict information only from computer models.
- _____ 13. Isotherms show temperature gradients.
- _____ 14. Isobars are lines of constant wind speed.
- _____ 15. Heat index takes into account air temperature and relative humidity.
- _____ 16. An F6 tornado would cause massive destruction wherever it touches the ground.
- _____ 17. Air masses forming in northern North America are cooler and drier than those forming in the North Pacific.
- _____ 18. Air masses form mainly in high pressure zones.
- _____ 19. Air masses are stationary and do not move.
- _____ 20. Because of the stability of temperature inversions, they often produce healthy air in cities.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. _____ is the percentage of water vapor a certain volume of air contains relative to the maximum amount it can contain.
22. The temperature at which air becomes saturated with water is called _____.
23. _____ is a cloud located at or near the ground.
24. An _____ is a batch of air that has nearly the same temperature and humidity.
25. Two air masses meet at a _____.
26. A _____ is a system of winds rotating counterclockwise around a low pressure system in the northern hemisphere.

27. _____ contains instruments that measures: wind speed, temperature, wind direction, humidity and precipitation.
28. The amount of snow that falls is measured with a snow _____ .
29. At a _____, a cold air mass forces a warmer air mass upwards.
30. Air that heats up, rises and forms a _____ pressure zone.

Short Answer

Answer each question in the space provided.

31. How do clouds influence weather?
32. List the 4 types of fronts and explain the weather associated with each.
33. How is weather predicted? Why is it so difficult to predict the weather?

CHAPTER **17** MS Climate Assessments

Chapter Outline

- 17.1 CLIMATE AND ITS CAUSES
 - 17.2 WORLD CLIMATES
 - 17.3 CLIMATE CHANGE
 - 17.4 CLIMATE
-

17.1 Climate and Its Causes

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- The most solar radiation over a year strikes
 - the north and south pole
 - the tropic of cancer and tropic of capricorn
 - the equator
 - the north pole
- At about 30°N and 30°S, the air is warm and dry because
 - it is a zone of evaporation.
 - it originated at the equator.
 - it is a high pressure zone.
 - all of these.
- The prevailing winds are
 - where air in the circulation cells ascends or descends.
 - affected by local climate.
 - the ground level portion of one of the circulation cells.
 - all of these.
- Compared with lower altitudes, at higher altitudes the air molecules are
 - less densely packed.
 - more densely packed.
 - the same density of packing.
 - packed with variable density.
- Rain falls
 - at the equatorial low
 - at 30-degrees north and south
 - at the polar front
 - a c

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Air temperature is lower at lower altitude.
- _____ 7. In the polar regions, a lot of sunlight reflects back into space.
- _____ 8. The most snowfall is at the poles.

_____ 9. Precipitation falls on mountains because air cools and can hold less moisture.

_____ 10. The latitude of a region affects how much solar radiation it receives.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The horizontal movement of air is called _____.

12. Weather averaged over the long term is called _____.

13. Coastal areas have a _____ climate.

14. Collisions between molecules give off _____, which warms the air.

15. The amount of solar radiation a spot receives depends on its _____.

Short Answer

Answer each question in the space provided.

16. Draw a picture of the globe with latitude marks (0, 30, 60, 90) and label the Intertropical Convergence Zone, Trade Winds, Westerlies and Poles.

17. San Francisco, California and Wichita, Kansas are at the same latitude, but SF is near the ocean and Wichita is inland. Describe what you think the climate is like for each in both summer and winter and why.

17.2 World Climates

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- To figure out which climate zone you are in you should
 - look at the plants
 - monitor the temperature of the region
 - monitor the precipitation of the region
 - understand the seasons of the region
- Small areas with climates that differ from the surrounding area are known as?
 - small climates
 - micro areas
 - microclimates
 - abnormalities
- In what latitude zone are most of Earth's deserts between?
 - 0° and 15°
 - 15° and 30°
 - 30° and 45°
 - 45° and 60°
- Dry climate zones
 - have almost no rainfall
 - experience more evaporation than precipitation
 - are all desert biomes
 - all of these
- Where it is dark and bitterly cold in winter,
 - it is a polar climate
 - the ground is permanently frozen
 - there may be so little precipitation, it is a desert
 - all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Right around the equator is the one latitude with no glaciers.
- _____ 7. A valley could have a different microclimate from a hillside because cold air sinks.
- _____ 8. The Southern Hemisphere has no lands with a continental climate.

_____ 9. Coastal California has a Mediterranean climate with woody plants to survive dry summers.

_____ 10. The Sonoran Desert has only a few sparse plants.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Greenland and Antarctica are covered by a(n) _____.

12. The _____ biome contains low bushes and bunch grasses.

13. A zone that is characterized by the living organisms within it is a(n) _____.

14. Near the equator where part of the year is dry, the vegetation is typically _____.

15. Ground that is permanently frozen is called _____.

Short Answer

Answer each question in the space provided.

16. In the map of world climates, why don't the different zones just follow latitude lines?

17. Why do the organisms in a certain climate type share characteristics wherever they are in the world?

17.3 Climate Change

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- How much have temperatures risen since the end of the Pleistocene ice ages?
 - 4 °C
 - 0 °C
 - 4 °C
 - 40 °C
- Atmospheric greenhouse gas levels
 - are currently falling
 - are currently stable
 - are not being measured
 - are currently rising
- Sunspots
 - are storms on the Sun's surface
 - change in number over time
 - have not been found to be the cause of global warming
 - all of these
- Burning fossil fuels,
 - increases the ozone content of the atmosphere
 - releases carbon dioxide into the atmosphere
 - create an ozone hole that destroy the ozone layer
 - none of these
- An El Niño event
 - shuts down upwelling off of South America
 - changes water temperature
 - affects worldwide weather for as long as two years
 - all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Small changes in temperature can make big changes in climate.
- _____ 7. From 0 C.E. to 2010 C.E. average global temperature has gone straight up.
- _____ 8. Climate can change as continents shift position.

_____ 9. Global warming will cause weather to be more extreme.

_____ 10. All global warming projections show temperature rising during this century.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The time period of the ice ages between 2 million and 14,000 years ago is known as the _____ Epoch.

12. When glaciers advance, sea level _____.

13. Instruments on Mauna Loa volcano in Hawaii show that the greenhouse gas _____ is rising.

14. Throughout Earth history on average Earth's temperature has been _____ than today. .

15. The Trade Winds blow east to west but stronger than usual during a(n) _____.

Short Answer

Answer each question in the space provided.

16. What causes an El Niño event?

17. What are a few of the predicted effects of global warming?

17.4 Climate

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Climate is
 - the long-term average of weather
 - stable over Earth history
 - dependent entirely on latitude
 - all of these
- What is the primary factor that influences the climate of a region?
 - wind
 - latitude
 - rainfall
 - sunlight
- Which type of climate has the greatest temperature differences between day and night and between summer and winter?
 - maritime
 - polar
 - equatorial
 - continental
- Over the past 130 years, temperature has
 - risen steadily
 - gone up and down so that it averages out
 - risen dramatically from the average
 - none of these
- Which biome do you find where there is extreme cold, little light, little precipitation and small ground-hugging plants?
 - subpolar
 - ice cap
 - steppe
 - polar tundra
- Which of the following is an example of a microclimate?
 - a glacier on top of Mt. Kilimanjaro
 - San Francisco, which is moderated by the Pacific Ocean
 - coastal California, which has a long summer drought
 - the massive expanse of the Amazon Rainforest

7. The most recent ice age ended
 - a. 100 years ago
 - b. 1,000 years ago
 - c. 10,000 years ago
 - d. 100,000 years ago
8. Which of the following weather phenomena causes upwelling off of western South America to shut down?
 - a. El Niño
 - b. La Niña
 - c. normal conditions
 - d. none of these
9. Regarding El Niño and La Niña,
 - a. they are not caused by temperature variations
 - b. global warming may be speeding up the cycle
 - c. they are made worse by the ozone hole
 - d. all of these
10. Which greenhouse gas comes from fossil fuel burning?
 - a. ozone
 - b. methane
 - c. carbon dioxide
 - d. chlorofluorocarbons

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. The best way to identify a biome is to study the animals.
- _____ 12. Climate has changed throughout Earth history.
- _____ 13. Precipitation varies with latitude.
- _____ 14. Short woody plants in a Mediterranean climate are adapted to surviving wet winters.
- _____ 15. Dry climate zones cover about 50% of the world's land area.
- _____ 16. Rainforests survive a three month drought each dry season.
- _____ 17. The polar regions receive the least solar radiation.
- _____ 18. Atmospheric carbon dioxide levels are rising.
- _____ 19. Polar climates are found on some high mountains.
- _____ 20. Average global temperature is rising at an increasing rate.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. _____ is the average weather in a location over about 30 years.
22. Nearshore _____ can affect local climate by making it warmer or colder.
23. A _____ climate has no ocean influence.
24. The _____ biome is dominated by densely packed, broadleaf evergreen trees with tremendous diversity in lifeforms.
25. The westerly winds blow from _____ to _____.
26. In the Northern Hemisphere, the greatest rise in temperatures is being seen in the _____.

27. In the polar regions ice and snow _____ a large amount of the sun's light.
28. As air goes over the top of a mountain, the water content is _____ .
29. A climate type and its plants and animals make up a _____ .
30. As glaciers melt, sea level will _____ .

Short Answer

Answer each question in the space provided.

31. Why are the same types of organisms found at similar latitudes and in similar positions on nearly all continents in both the Northern and Southern Hemispheres (with one exception)?

32. How are climate zones classified?

33. What can cause long term climate change?

CHAPTER **18** **MS Ecosystems and Human Populations Assessments**

Chapter Outline

- 18.1 ECOSYSTEMS**
 - 18.2 CYCLES OF MATTER**
 - 18.3 HUMAN POPULATIONS**
 - 18.4 ECOSYSTEMS AND HUMAN POPULATIONS**
-

18.1 Ecosystems

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Herbivores are which type of consumer?
 - a. Producer
 - b. Primary consumer
 - c. Secondary consumer
 - d. Tertiary consumer
2. Which of the following is NOT a habitat?
 - a. A hole in a cactus
 - b. Under a leaf in a forest
 - c. Within the intestines of a shark
 - d. All of the above are habitats
3. Which of the following would be highest on the food pyramid?
 - a. Phytoplankton
 - b. Snakes
 - c. Falcons
 - d. Mice
4. Nutrients are useful for
 - a. growing an organism's body
 - b. building shells or bones
 - c. creating proteins, fats, carbohydrates and nucleic acids
 - d. all of these
5. When one organism eats another organism, it
 - a. receives all of its nutrients
 - b. receives all of its energy
 - c. receives all of its energy and nutrients
 - d. none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. An organism that eats many types of animals only is an omnivore.
- _____ 7. Every ecosystem has the same general roles that living creatures fill.
- _____ 8. In an ecosystem, energy flows in many directions; matter flows in one direction.

_____ 9. A community is all of the species and abiotic factors that coexist within a specific area.

_____ 10. Mules, offspring of male donkeys and female horses, cannot have offspring and so are not members of a species.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. All living creatures and non living things that interact within an area make up a(n) _____.

12. Organisms that break dead tissue down into nutrients are _____.

13. Wind is a(n) _____ part of an ecosystem.

14. A(n) _____ is a combination of all the populations living in an ecosystem.

15. Feeding relationships of overlapping food chains are displayed on a(n) _____.

Short Answer

Answer each question in the space provided.

16. What would happen to life on Earth if there were no decomposers?

17. How do nutrients move through ecosystems?

18.2 Cycles of Matter

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What happens during respiration?
 - a. producers create food energy from solar energy
 - b. consumers use solar energy to create food energy
 - c. living things release energy from food
 - d. carbon dioxide is converted into oxygen
2. What is nitrogen fixing?
 - a. Soil bacteria make nitrogen useful for producers.
 - b. Producers make nitrogen useful for consumers.
 - c. Nitrogen gas in the atmosphere creates complex compounds.
 - d. Nitrogen combines with oxygen to make a useful gas.
3. Greenhouse gases
 - a. absorb incoming solar radiation in the atmosphere.
 - b. trap infrared radiation radiating from Earth's surface.
 - c. scatter sunlight from one molecule to another.
 - d. All of these.
4. Carbon is
 - a. stored in the mantle
 - b. released into the atmosphere at volcanoes
 - c. stored in the oceans
 - d. all of these
5. Destroying forests changes the carbon cycle because
 - a. plants take carbon out of the atmosphere
 - b. burning plants releases stored carbon into the atmosphere
 - c. more carbon is in the atmosphere
 - d. all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Carbon is an important part of organic material.
- _____ 7. When an organism decomposes, its carbon is released back into the environment.
- _____ 8. Carbon is only found in organic material.

_____ 9. Nitrogen is a nutrient so more is always better.

_____ 10. Algae create food energy from sunlight.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Carbon dioxide is a _____ gas in the atmosphere.

12. A low oxygen zone, as found in the Gulf of Mexico, creates a _____ .

13. Besides fossil fuels, burning _____ adds carbon dioxide to the atmosphere.

14. _____ contain carbon dioxide from the ancient atmosphere.

15. Living organisms release carbon dioxide into the atmosphere during the process of _____.

Short Answer

Answer each question in the space provided.

16. Describe how carbon cycles through living things.

17. What happens when excess nitrogen enters a pond or lake?

18.3 Human Populations

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Carrying capacity is achieved when what occurs?
 - a. the number of births equal the number of deaths
 - b. the number of births exceeds the number of deaths
 - c. the number of deaths exceed the number of births
 - d. the number of deaths falls below 10,000
2. The Green Revolution refers to what?
 - a. improved energy efficiency
 - b. improved agricultural productivity
 - c. improved oil production
 - d. improved color pigmentation
3. What are the goals of sustainable development?
 - a. distribute resources fairly
 - b. conserve resources so they won't run out
 - c. use resources in ways that won't harm ecosystems
 - d. all of the above
4. What is true about the beginning of the Industrial Revolution?
 - a. mass production
 - b. widespread use of fossil fuels
 - c. late 1700s
 - d. all of these
5. To better develop sustainably, people can
 - a. use more pesticides to further the goals of the Green Revolution.
 - b. use more fossil fuels to improve transportation and manufacturing.
 - c. purchase products that are produced sustainably.
 - d. all of these.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The main reason for the human population explosion is a decline in the death rate.
- _____ 7. Vaccinations and antibiotics helped to increase human population.
- _____ 8. The wealthier countries are growing faster than the poorer countries.

_____ 9. The carrying capacity of Earth for humans is many times more than the population today.

_____ 10. A population grows rapidly when it is near its carrying capacity.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A species of organisms introduced into a new environment by humans either purposefully or by accident is a(n) _____.

12. The current human population is around _____.

13. The ability to produce automobiles mass during the _____ caused fossil fuels to grow rapidly.

14. _____ can kill pests that might harm crops.

15. A population grows when the death rate subtracted from the birth rate is a _____ number.

Short Answer

Answer each question in the space provided.

16. Why has the death rate fallen in industrialized nations?

17. How did the Green Revolution change the carrying capacity of Earth for humans? Is there a reason this could be a problem?

18.4 Ecosystems and Human Populations

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- All members of a species that are found in the same place are part of a(n)
 - community
 - population
 - ecosystem
 - niche
- Which of the following is an abiotic factor?
 - bacteria
 - plants
 - light
 - fungi
- Which is an example of a food chain?
 - plant-carnivore-herbivore-decomposer
 - algae-fish-shark-decomposer
 - plant-herbivore-decomposer-carnivore
 - decomposer-plant-carnivore-decomposer
- Nutrients and carbon dioxide are the result of tissue breakdown by
 - herbivores
 - carnivores
 - omnivores
 - decomposers
- Forests are important to the carbon cycle because they
 - release carbon dioxide to the atmosphere
 - increase the global amount of carbon dioxide
 - increase carbon dioxide in the soil
 - store carbon dioxide
- What percent of energy is passed from organisms of one trophic level to the next?
 - 5%
 - 10%
 - 15%
 - 20%
- Respiration
 - releases carbon dioxide into the atmosphere

- b. is the opposite of photosynthesis in terms of gases
 - c. is done by living organisms
 - d. all of these
8. What is the largest source of excess carbon dioxide in the atmosphere?
- a. burning fossil fuel
 - b. deforestation
 - c. respiration
 - d. none of these
9. Top predators like lions are scarce because
- a. they are large and take up a lot of space
 - b. they are a favorite food of many organisms
 - c. only a small amount of energy makes it that far up the food web
 - d. none of these.
10. When greenhouse gases in the atmosphere increase, the
- a. atmosphere warms
 - b. atmosphere cools
 - c. temperature of the atmosphere stays the same
 - d. effect is not yet known

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Matter moves through an ecosystem in one direction.
- _____ 12. Energy moves through an ecosystem in many directions.
- _____ 13. Forests and oceans store carbon.
- _____ 14. Global warming is a consequence of increased carbon dioxide in the atmosphere.
- _____ 15. Scavengers eat animals that are already dead.
- _____ 16. Current world human population is less than 5 billion.
- _____ 17. Grazers kill prey for food.
- _____ 18. Dead zones are caused by excess nutrients.
- _____ 19. One of the most important steps to achieving a more sustainable future is to reduce human population.
- _____ 20. Overpopulation will occur so far in the future that we do not need to worry about it.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. An _____ is made up of living creatures and the nonliving things that those creatures need within an area.
22. A _____ is a single type of organism that can interbreed and produce fertile offspring.
23. The place a species lives is its _____ .
24. A producer that is eaten by a grazing herbivore fills the same _____ as an organism that does the same things in a different location.
25. Matter that is crucial to living things and passes between individuals is called _____.
26. _____ are organisms that are introduced into a habitat where they do not belong.

27. Soil, air and light are among the _____ factors needed in an ecosystem.
28. When the death rate exceeds the birth rate, a population will _____
29. If you eat a quiche made of spinach, mushrooms, eggs and chicken, you are a(n)_____.
30. For nitrogen in the atmosphere to be useful to organisms it must be _____.

Short Answer

Answer each question in the space provided.

31. What does it mean to say that each ecosystem has the same niches, but the same species don't always fill them?

32. Why is the human population increasing so dramatically?

33. What is the purpose of sustainable development?

CHAPTER **19** MS Human Actions and the
Land Assessments

Chapter Outline

- 19.1 LOSS OF SOILS
 - 19.2 POLLUTION OF THE LAND
 - 19.3 HUMAN ACTIONS AND THE LAND
-

19.1 Loss of Soils

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. How do trees prevent soil erosion?
 - a. Trees keep the wind from blowing hard through an area.
 - b. The leaves keep rain from striking the ground hard
 - c. Roots of the trees hold the soil together
 - d. All of the above
2. Soil erosion
 - a. is a natural process and as such should be left alone
 - b. has been accelerated by human activities
 - c. is an aesthetic problem but does little damage to human society
 - d. none of these
3. Farming causes soil erosion because
 - a. the land is uncovered by plants for part of the year
 - b. farm machines churn up the soil
 - c. crop plants are often less able to protect the land than native plants
 - d. all of these
4. To reduce soil erosion from agriculture
 - a. plant tall trees around the field to protect from wind.
 - b. use large sprinklers to be sure the soil is always moist.
 - c. plant one type of crop in a large region to keep conditions the same.
 - d. all of these.
5. To reduce soil erosion from logging
 - a. clear cut an entire area
 - b. log mostly on steep lands
 - c. cut a small area and replant the logged area with new seedlings
 - d. all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Soil is an important natural resource.
- _____ 7. The Dust Bowl was caused entirely by bad farming practices.
- _____ 8. Off road vehicles cause soil erosion, but hiking, even off trail, does not.

_____ 9. Grazing animals are beneficial to soil as they compact the soil under their hooves.

_____ 10. The Dust Bowl took place in the 1930s in the Midwestern United States.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The soil that is most likely to erode is the nutrient-rich _____.

12. _____ animals cause soil erosion because they churn up ground with their hooves.

13. Besides removing trees, logging removes _____, the dead leaves that protect forest floors from erosion.

14. _____ runs off a paved surface and causes erosion nearby.

15. Plant _____ hold soil in place.

Short Answer

Answer each question in the space provided.

16. Describe three farming methods that minimize soil erosion.

17. How do recreational activities cause soil erosion?

19.2 Pollution of the Land

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. At Love Canal
 - a. the hazardous wastes were safely buried
 - b. people became sick right after the town was built
 - c. the first sign that something was wrong was that children developed cancer
 - d. none of these
2. Where are Superfund sites located?
 - a. in densely populated areas
 - b. spread across the U.S.A.
 - c. East of the Mississippi River
 - d. all around the world
3. Which of the following is NOT considered a potentially hazardous material?
 - a. baking soda
 - b. batteries
 - c. fertilizers
 - d. paint
4. At Love Canal
 - a. the problem was uncovered by local residents
 - b. the local government detected the problem and dealt with it
 - c. the state government detected the problem and dealt with it
 - d. the federal government detected the problem and dealt with it
5. Nations that produce the most hazardous waste have the most
 - a. people
 - b. farmers
 - c. buildings
 - d. industry

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. To dispose of liquid waste, let it evaporate.
- _____ 7. Batteries contain toxic materials and should be disposed of properly.
- _____ 8. The Superfund Act requires companies to be responsible for hazardous chemicals that they put into the environment.

_____ 9. Pesticides in any amount are not toxic to humans.

_____ 10. Toxic wastes can be located because they are always visible.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The toxic metals lead and _____ damage the nervous system.

12. A substance that can cause serious harm, including death, or is poisonous is _____.

13. A good, non-toxic cleanser that just about everyone has in their kitchen is _____.

14. People use _____ to kill unwanted insects.

15. The people most likely to sicken first from exposure to hazardous wastes are _____.

Short Answer

Answer each question in the space provided.

16. What does the Superfund Act say?

17. What hazards are found in medical wastes?

19.3 Human Actions and the Land

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What occurred in the 1930s due in part to the poor farming practices?
 - a. World War I
 - b. World War II
 - c. the Dust Bowl
 - d. the Great Depression
2. What was Love Canal, New York?
 - a. a river
 - b. an abandoned waterway
 - c. a town
 - d. none of these
3. What did the Superfund Act of 1980 require businesses to do?
 - a. inform homeowners of risk from chemicals
 - b. sell polluted land to the government
 - c. pay to clean up the pollution they created
 - d. pay extra taxes if they polluted
4. Lead poisoning
 - a. causes cancer
 - b. causes neurological damage
 - c. is always reversible
 - d. all of these
5. Forests protect soil from erosion because
 - a. leaf litter protects the ground
 - b. plant roots hold soil together
 - c. trees break the wind
 - d. all of these
6. For strip cropping,
 - a. groundcover plants are planted between crop fields
 - b. step-like terraces are plowed onto a slope
 - c. crops rows follow hill contours
 - d. fields are planted all year round
7. How contaminated sites are usually identified?
 - a. the company notifies the Environmental Protection Agency (EPA)

- b. people start getting sick
 - c. the EPA randomly tests areas
 - d. animals show up with mutations
8. To avoid soil erosion
- a. contour hillsides that are to be farmed.
 - b. clear forests to make the landscape all the same.
 - c. introduce worms and other small creatures to the soil.
 - d. none of these.
9. Which of the following recreational activities can accelerate soil erosion?
- a. hiking
 - b. off road trails for ATVs
 - c. camping
 - d. all of the above
10. Hazardous wastes may include
- a. batteries
 - b. electronics
 - c. farm chemicals
 - d. all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Logging results in the loss of leaf litter, which aids erosion.
- _____ 12. Farmland erodes a lot in winter when the land lies fallow.
- _____ 13. The Dust Bowl was caused entirely by bad farming practices.
- _____ 14. Many practices can be adopted to prevent soil erosion.
- _____ 15. Surface mining disturbs the land but doesn't contribute to soil erosion.
- _____ 16. Fine soil is blown away by wind.
- _____ 17. All household items can be disposed of in the trash.
- _____ 18. Construction protects soil from erosion because of all the concrete.
- _____ 19. A Love Canal resident was indirectly responsible for passage of the Superfund Act.
- _____ 20. If a company cannot pay to clean a Superfund Site, it will just be left alone.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. If too many sheep are living in the area, the land may become _____.
22. _____ is a natural process that has been accelerated by human activities.
23. _____, such as computers and cell phones, release toxic chemicals when they are put in landfills.
24. Topsoil blew in huge storms during the _____.
25. Love Canal became a _____ site in 1983.
26. A _____ material causes serious harm, death, or is poisonous.
27. A _____ material destroys other things with chemical reactions.
28. Toxic waste may cause cancer or birth defects so for humans it is _____.

29. Anything that catches fire easily and may send dangerous smoke into the air is called _____.
30. _____ farming does not disturb the soil as much before planting.

Short Answer

Answer each question in the space provided.

31. Briefly describe three human activities that can cause soil erosion.
32. What can you do to reduce soil erosion during your recreational activities?
33. Briefly describe the four types of hazardous waste.

CHAPTER **20** **MS Human Actions and Earth's Resources Assessments**

Chapter Outline

- 20.1 USE AND CONSERVATION OF RESOURCES**
 - 20.2 USE AND CONSERVATION OF ENERGY**
 - 20.3 HUMAN ACTIONS AND EARTH'S RESOURCES**
-

20.1 Use and Conservation of Resources

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. The wealthiest 20% of people in the world use what percent of the resources?
 - a. 35%
 - b. 55%
 - c. 85%
 - d. 100%
2. Which of the following is a renewable resource?
 - a. oil
 - b. natural gas
 - c. forests
 - d. coal
3. Natural resources
 - a. can become unusable if they become polluted
 - b. are useful as long as they are not used up
 - c. are most valuable if they are renewable
 - d. none of these
4. If a forest is logged,
 - a. trees can be planted and so the forest is renewable
 - b. trees can be planted, but a forest takes time to be renewed
 - c. it can never be the same as it was
 - d. none of these
5. Fish can be a non-renewable resource if they
 - a. contain mercury
 - b. are overfished
 - c. are no longer desired as a food source
 - d. none of these.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Drinking bottled water is better for you and the environment.
- _____ 7. It is usually better to throw something away than to fix it.
- _____ 8. Pollution occurs when a product is produced and when it is tossed away.

_____ 9. Your community probably recycles plastics that have certain numbers on them.

_____ 10. Soil is considered a non-renewable resource.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. When you choose a product contained in something that is easily recycled you are _____ .

12. All natural resources are divided into renewable and _____.

13. To make natural resources last longer we must _____ them.

14. A resource that is renewed, but much more slowly than it is used, is a _____ resource.

15. A good way to conserve resources is to reduce, reuse and _____.

Short Answer

Answer each question in the space provided.

16. What determines the value of a resource?

17. Why should you conserve natural resources by buying less stuff?

20.2 Use and Conservation of Energy

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Saving energy in industry is
 - possible if equipment is designed to be efficient
 - possible if new materials are used
 - not possible, since little energy is used
 - none of these.
- What are some ways residences can use less energy?
 - Turn off lights when not in use
 - Only run appliances when necessary
 - Use a fan instead of an air conditioner
 - All of the above
- What percent of the energy use in the United States is used for transportation?
 - 14%
 - 28%
 - 45%
 - 67%
- The cost of an energy source depends on
 - the cost of equipment needed to harness it
 - the cost of transporting it
 - its energy efficiency
 - all of these
- Conserving energy
 - is expensive because you have to buy special equipment
 - reduces costs because you create energy from less expensive sources
 - reduces costs because you use less energy
 - All of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. If the cost of oil goes up, sources that were too expensive to extract may become economical.
- _____ 7. To increase energy efficiency, be sure that equipment is running well.
- _____ 8. Conserving resources cuts down on trash.

_____ 9. The best energy source would be one that supplies a lot of energy and takes a lot of energy to make it useable.

_____ 10. Individuals can only do a little to increase energy efficiency because most energy is used by industry.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The more efficient an energy source is the more useful _____ it will produce.

12. If you must use 3 units of energy to get 18 units of energy, you have gained _____ units of energy.

13. Like homes, industries should _____, reuse and recycle materials.

14. You save resources when you buy _____, like when you buy your food at a farmers' market.

15. The country that uses the most resources in the world is _____ .

Short Answer

Answer each question in the space provided.

16. List four ways that you can use energy more efficiently or use less energy.

17. What are reasons that solar is a good source of energy?

20.3 Human Actions and Earth's Resources

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. A renewable resource
 - a. will always be a renewable resource
 - b. can be used so that it becomes non-renewable
 - c. will always become a non-renewable resource
 - d. none of these
2. How many countries have almost 80% of all the world's oil?
 - a. 10
 - b. 11
 - c. 12
 - d. 13
3. Which is NOT one of the biggest users of oil?
 - a. United States
 - b. China
 - c. Europe
 - d. Saudi Arabia
4. Natural resources include
 - a. diamonds
 - b. computers
 - c. sunlight
 - d. trees
5. Where do we stand on fossil fuels?
 - a. Easy to get at reserves are dwindling so we go to more difficult locations.
 - b. They form just about as fast as we use them.
 - c. Massive new reserves are regularly being found.
 - d. none of these
6. In the United States, which sector uses the most energy?
 - a. industry
 - b. commercial
 - c. residential
 - d. transportation
7. To reduce energy use when driving,
 - a. buy a fuel efficient car

- b. drive as fast as possible
 - c. do not worry about car maintenance
 - d. all of these
8. The most energy efficient light bulbs to use in your home are
- a. incandescent
 - b. halogen
 - c. compact fluorescent
 - d. tungsten
9. To reduce resource use
- a. buy goods that will last longer
 - b. repair materials rather than replace them
 - c. buy only what you need
 - d. all of these
10. The most efficient energy sources are
- a. fossil fuels
 - b. non-renewables in general
 - c. renewables in general
 - d. all of them are the same

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Natural resource use is generally lower in poorer countries.
- _____ 12. The nations that consume the most oil are the nations that produce the most oil.
- _____ 13. Pollution from discarded material degrades the land, air, and water.
- _____ 14. Consumerism leads to greater resource use, but it also leads to more waste.
- _____ 15. Water from a river might not be a renewable resource if it becomes polluted.
- _____ 16. Nuclear power is clean so it is a renewable resource.
- _____ 17. Recycling can help conserve natural resources.
- _____ 18. Energy Star appliances save a lot of energy over their lifetime.
- _____ 19. Turning off lights when not in a room is an easy way to conserve energy.
- _____ 20. Replacing old appliances with newer models doesn't save energy.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. We need to _____ natural resources so they will last longer.
22. Energy _____ describes how much useful work is extracted from one unit of energy.
23. A tremendous source of waste is the _____ that water comes in.
24. If you reduce your energy use, or _____ energy, your costs will be reduced.
25. Aluminum cans may be _____ into an aluminum cooking pan.
26. Efficient energy use gets more _____ out of the energy.
27. Gravel and sand are super abundant, but even so they are _____ resources.
28. Resources that regenerate faster than they are used are _____.

29. When we practice _____ , we make sure resources will be available in the future.

30. _____ are resources that cannot be regenerated on a useful timescale.

Short Answer

Answer each question in the space provided.

31. What must be done before fossil fuels can be used?

32. Why is energy conservation beneficial?

33. List 5 ways that natural resources can be conserved.

CHAPTER

21

**MS Human Actions and
Earth's Water Assessments**

Chapter Outline

- 21.1 HUMANS AND THE WATER SUPPLY
 - 21.2 WATER POLLUTION
 - 21.3 PROTECTING THE WATER SUPPLY
 - 21.4 HUMAN ACTIONS AND EARTH'S WATERS
-

21.1 Humans and the Water Supply

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Regarding water use, developing nations use
 - a greater percentage for industry.
 - more for industry than for agriculture.
 - more for household uses than any other category.
 - a greater percentage for agriculture.
- Recreational uses of water include
 - irrigating golf courses
 - kayaking
 - scuba diving
 - all of these
- Agricultural chemicals
 - may enter groundwater
 - evaporate into the air
 - stay on the plants they target
 - all of these
- Water is lost for human use if it
 - infiltrates into the ground
 - enters a stream
 - becomes polluted
 - all of these
- The amount of water available to a population depends on
 - rainfall
 - the money available develop water supplies
 - political agreements
 - all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Large irrigation systems may waste a lot of water.
- _____ 7. Water scarcity is not a problem since 70% of Earth is covered by water.
- _____ 8. Glaciers are a source of fresh water in some locations.

_____ 9. By the year 2025, only one-quarter of the world's people will have enough clean water.

_____ 10. In poorer countries, many young children die from waterborne diseases.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. People use water for swimming, fishing, boating and other activities. This is a(n) _____ use of water.

12. _____ and other organisms in water can cause disease.

13. A period of unusually low rainfall is a(n) _____.

14. From your house, water goes down the drain and into a(n) _____.

15. Most crops in the developed nations use water from _____.

Short Answer

Answer each question in the space provided.

16. What are the industrial uses of water?

17. What are the consequences of water shortages?

21.2 Water Pollution

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. The Gulf of Mexico oil spill began with
 - a. a ship running aground
 - b. a rig that cracked apart in a storm
 - c. a rig explosion
 - d. an onshore pipeline breaking apart
2. Industrial pollutants include
 - a. radioactive substances
 - b. chemicals
 - c. heat
 - d. all of these
3. Dead zones are found mostly
 - a. off of industrialized areas in developed nations
 - b. in the Gulf of Mexico
 - c. off of farming areas in developing nations
 - d. none of these
4. The temperature of a lake may rise if the water is
 - a. released from a reservoir
 - b. used to cool a power plant
 - c. exposed to oil drilling
 - d. all of these
5. An example of point source pollution is
 - a. a nuclear power plant
 - b. acid rain
 - c. a set of enormous animal farms
 - d. steel factories along a river

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Water pollution contributes to water shortages.
- _____ 7. Most ocean pollution comes from ships at sea.
- _____ 8. Animal waste and fertilizers bring nutrients to nearby water sources.

_____ 9. Water pollution includes any contaminant that gets into lakes, streams, and oceans.

_____ 10. Factory farms with thousands of animals pollute ocean water with animal wastes.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. When human activities heat up a natural water body it is called _____ pollution.

12. Excess fertilizers runoff into the Gulf of Mexico to create a region with little life called a(n) _____.

13. Pollutants that rain from the atmosphere are _____ source pollutants.

14. Toxic metals that are industrial pollutants include lead and _____.

15. Wastewater from septic tanks, sewers, and yards are part of _____ pollution.

Short Answer

Answer each question in the space provided.

16. What two types of damage to the water supply can be done by huge animal farms?

17. What damage can an oil spill do?

21.3 Protecting the Water Supply

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Passage of the Clean Water Act
 - a. established the Environmental Protection Agency
 - b. outlawed emitting all pollutants into water
 - c. made governments responsible for all pollution
 - d. all of these
2. Contaminants in water that need to be treated include
 - a. bacteria, algae, viruses, and fungi
 - b. some elements
 - c. chemical pollutants
 - d. all of these
3. Water purification
 - a. increases acidity
 - b. does not always produce water that is safe for drinking
 - c. removes all contaminants
 - d. none of these
4. What can governments and international agencies do to prevent pollution and clean up the oceans?
 - a. pass laws
 - b. provide funding
 - c. enforce laws
 - d. all of the above
5. To discard motor oil
 - a. put it in the storm sewers
 - b. put it down the drain
 - c. take it to an approved disposal facility
 - d. put it on the ground

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Cleaning the ocean of pollutants is difficult because the ocean is so vast.
- _____ 7. It is easier to clean water that has become polluted than to keep it from becoming polluted.
- _____ 8. Water for drinking, medicine, agriculture, and water parks is all purified to the same quality.

- _____ 9. Wastewater contains hundreds of contaminants.
- _____ 10. In a wastewater treatment plant, water is treated in one single process.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The acronym for the Environmental Protection Agency is _____.
12. _____ nations have few or no water treatment facilities.
13. _____ produces drinking water by removing organisms, elements and chemical pollutants.
14. _____ removes contaminants, such as solids and particles from wastewater.
15. Since passage of the _____ Act many wastewater treatment plants have been constructed.

Short Answer

Answer each question in the space provided.

16. What are some ways that you can conserve water in and around your home?

17. Describe the four processes in a water treatment facility.

21.4 Human Actions and Earth's Waters

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. People in some parts of the world cannot get enough clean water because
 - a. there is not enough water
 - b. they have no way to bring the water to the people
 - c. there is not enough money for treatment plants
 - d. all of these
2. Scientists estimate that half of the world's population will not have enough water by what year?
 - a. 2015
 - b. 2020
 - c. 2025
 - d. 2030
3. Droughts
 - a. make water shortages worse
 - b. are decreasing in frequency
 - c. only strike wet regions
 - d. none of these.
4. What is the most widespread source of water contamination in developing countries?
 - a. municipal pollution
 - b. agricultural pollution
 - c. raw sewage
 - d. industrial pollution
5. Thermal pollution is
 - a. not as harmful to life as chemical pollution
 - b. only a problem in developing nations
 - c. only seen around nuclear power plants
 - d. none of these
6. Coastal areas become polluted by
 - a. runoff from land
 - b. direct dumping of wastewater
 - c. power plants
 - d. all of these
7. Water is a _____ resource, and it is _____.
 - a. renewable; unlimited

- b. non-renewable; unlimited
 - c. renewable; limited
 - d. non-renewable; limited
8. People today use how much more water than they did 100 years ago?
- a. 2 times
 - b. 4 times
 - c. 6 times
 - d. 10 times
9. It is estimated that by 2025,
- a. all nations will provide clean water to all residents
 - b. a smaller percentage than today will not have clean water
 - c. about 40% of people will face water scarcity
 - d. nearly half of people won't have enough clean water
10. Waterborne diseases are the leading cause of death
- a. nowhere ever
 - b. in young children in many nations
 - c. in people of all ages worldwide
 - d. in people of all ages in many nations

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Getting rid of bacteria in contaminated water requires high-tech solutions.
- _____ 12. Aquatic organisms are extremely resistant to pollution.
- _____ 13. Nearly all of Earth's water is not usable by humans.
- _____ 14. The EPA has helped to improve water quality.
- _____ 15. Oil spills are easy to clean up.
- _____ 16. Many technologies are available to conserve water.
- _____ 17. Irrigation is only rarely used in agriculture today.
- _____ 18. Golf courses use very little water compared to other recreational activities.
- _____ 19. About one-quarter of all diseases are caused by drinking unsafe water.
- _____ 20. Water is unevenly distributed around the world.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. Most farms in the developed world get water from _____.
22. Your _____ uses water to cook, bathe, drink, flush toilets and wash the dog, among other things.
23. _____ delivers small amounts of water directly to the soil at the roots of each plant or tree.
24. _____ occur when a region experiences usually low precipitation for months or years.
25. Fresh water can be stored in icy _____.
26. A _____ is a large ocean area with no fish or plant life.
27. _____ is a rise in water temperature from a power plant.
28. _____ removes contaminants, such as solids and particles, from sewage.

29. Drinking water is produced through the process of _____.

30. The Clean Water Act gives the _____ the authority to set water quality standards.

Short Answer

Answer each question in the space provided.

31. What is the best way to have clean water (to keep it clean or to clean it once it's polluted)? How does society see to it that this happens?

32. What creates a dead zone?

33. What was the result of the passage of the Clean Water Act?

CHAPTER

22

MS Human Actions and the Atmosphere Assessments

Chapter Outline

- 22.1 AIR POLLUTION
 - 22.2 EFFECTS OF AIR POLLUTION
 - 22.3 REDUCING AIR POLLUTION
 - 22.4 HUMAN ACTIONS AND THE ATMOSPHERE
-

22.1 Air Pollution

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Many of the smoggiest cities are in which state?
 - California
 - New York
 - Texas
 - Florida
- Slash-and-burn is done primarily
 - for energy
 - to clear land for agriculture
 - to clear land for construction
 - none of these
- How many pollutants does the Clean Air Act of 1970 regulate?
 - 6
 - 89
 - 189
 - 289
- Pollutants may collect
 - beside mountain ranges
 - in inversions
 - when there is little wind
 - all of these.
- Smog that forms from a reaction with sunlight is known as
 - photographic smog
 - photochemical smog
 - photosynthesized smog
 - photogenic smog

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Before the Industrial Revolution there was very little air pollution that wasn't natural.
- _____ 7. Burning fossil fuels releases carbon dioxide into the atmosphere.
- _____ 8. About 150 million tons of pollutants enter into the atmosphere every year.

- _____ 9. The Clean Air Act regulates carbon dioxide.
- _____ 10. Ozone in the lower atmosphere protects life from UV radiation.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The Clean Air Act was signed in the year _____.
12. The carbon-, nitrogen- and sulfur-oxides; particulates, lead and some organic compounds are _____-pollutants.
13. Once widely used in paint, gasoline and pipes, this pollutant causes brain damage and blood poisoning: _____.
14. _____ enter the atmosphere from volcanic eruptions, windblown dust, industry and vehicles.
15. Besides burning fossil fuels, burning _____ releases pollutants into the atmosphere.

Short Answer

Answer each question in the space provided.

16. How does ozone pollution form? Where in the U.S. is it the most common?
17. If smoke from burning trees or dust blown in wind is natural, why is it considered a pollutant? What type of pollutant is it?

22.2 Effects of Air Pollution

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Particulates
 - a. increase asthma attacks
 - b. significantly reduce rates of skin cancer
 - c. are responsible for neurological diseases
 - d. have no effect on human health
2. Ozone is a pollutant in the _____, but is beneficial in the _____.
 - a. stratosphere; thermosphere
 - b. thermosphere; troposphere
 - c. ionosphere; thermosphere
 - d. troposphere; stratosphere
3. Limestone buildings and sculptures are eroded primarily by which of the following?
 - a. UV radiation
 - b. acid rain
 - c. ozone pollution
 - d. CFCs
4. The phenomenon of pollutants adding up in an organism for life is known as
 - a. bioaccumulation
 - b. accumulation
 - c. bio addition
 - d. biopollutants
5. Which fish species would typically contain the most mercury?
 - a. krill
 - b. shark
 - c. trout
 - d. oyster

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Lung cancer rates are increasing entirely due to more people smoking.
- _____ 7. Ozone loss near the North and South Poles is about the same.
- _____ 8. On a pH scale, numbers below 7 are basic.

_____ 9. Particulates reduce the amount of sunshine that reaches the ground.

_____ 10. Acid rain is produced by nitrogen and sulfur-oxides in the atmosphere.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. High _____ levels increase asthma and lung diseases.

12. _____ occurs as toxic substances increase up the food web.

13. _____ can dissolve limestone structures.

14. The ozone layer protects Earth surface from _____.

15. For ozone loss to occur, _____ in CFCs break apart ozone.

Short Answer

Answer each question in the space provided.

16. Describe how ozone breaks down in the stratosphere.

17. How does bioaccumulation of mercury occur?

22.3 Reducing Air Pollution

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. A carbon tax
 - a. encourages people to reduce carbon emissions
 - b. encourages conservation
 - c. charges money for carbon emissions
 - d. all of the above
2. A car that runs on gasoline and electric power is
 - a. a combustible engine vehicle
 - b. a hybrid vehicle
 - c. an electric vehicle
 - d. a diesel vehicle
3. Catalytic converters
 - a. break pollutants into non-toxic compounds
 - b. only work for particulates
 - c. reduce pollutants to zero
 - d. all of these
4. Removing carbon from the atmosphere is known as
 - a. carbon sequestration
 - b. carbon stealing
 - c. unpolluting
 - d. carbon burying
5. Nations benefit from developing emission reducing technologies in
 - a. trade-and-spend
 - b. spend-and-reduce
 - c. cap-and-trade
 - d. cap-and-reduce

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Since the passage of the Clean Air Act, emissions of the six major pollutants have decreased by 50%.
- _____ 7. Removing particles from emissions is a difficult process.
- _____ 8. Destruction by ozone creates the ozone hole.

_____ 9. Efforts to reduce greenhouse gas emissions have been successful.

_____ 10. Without the Montreal Protocol, skin cancer cases in the U.S. would have been higher.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Carbon can be removed from the atmosphere through the process of _____.

12. To remove pollutants from exhaust, use a(n) _____.

13. To reduce pollutants, modern cars are equipped with a(n) _____.

14. To reduce energy use, people could be charged a(n) _____ when they emit carbon dioxide.

15. Trees in a forest store carbon dioxide. When the forest burns, the greenhouse gas _____.

Short Answer

Answer each question in the space provided.

16. What is the Montreal Protocol?

17. Describe how carbon sequestration works. Give a natural example.

22.4 Human Actions and the Atmosphere

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Pregnant women should not eat much large fish due to
 - the possibility of lead poisoning
 - volatile organic compounds
 - bioaccumulation of mercury
 - none of these
- Which of the following is NOT a primary pollutant?
 - carbon dioxide
 - volatile organic compounds
 - sulfur dioxide
 - ozone
- Acid rain
 - forms when nitrogen oxides dissolve in rain
 - has a high pH
 - affect only location where it forms
 - all of these
- Rain
 - is naturally acidic
 - is turned to acid rain by ozone
 - has become more alkaline in recent decades
 - all of these
- Particulates can
 - cause acid rain
 - reduce photosynthesis
 - cause lung and heart disease
 - none of these
- Homes should have a detector to detect the deadly gas
 - carbon dioxide
 - carbon monoxide
 - sulfur dioxide
 - sulfur monoxide
- You are likely to consume more toxic metals
 - if you eat phytoplankton and other producers

- b. if you eat filter feeders like oysters
 - c. the lower on the food chain you eat
 - d. the higher up the food chain you eat
8. In carbon sequestration
- a. nations have an upper limit on their carbon dioxide emissions
 - b. carbon dioxide is removed from the atmosphere and stored
 - c. a tax is placed on carbon emissions
 - d. none of these
9. What reduces air pollutants from motor vehicles?
- a. muffler
 - b. fuel cell
 - c. catalytic converter
 - d. all of these
10. The effect of banning CFCs has been to
- a. eliminate the ozone hole
 - b. increase the ozone hole
 - c. stabilize the ozone hole
 - d. none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Ozone levels are worst during the early evening.
- _____ 12. The Montreal Protocol banned ozone-destroying substances abruptly.
- _____ 13. Increased particles in the air could increase rainfall.
- _____ 14. Volatile organic compounds are secondary pollutants.
- _____ 15. The Clean Air Act as passed in 1970 regulates only six pollutants.
- _____ 16. Air pollution is an annoyance but doesn't do any real damage.
- _____ 17. Photochemical smog occurs most in hot, humid locations.
- _____ 18. The increase in motor vehicles in cities has increased pollutants.
- _____ 19. Particulates reduce the amount of sunshine that can reach the ground.
- _____ 20. The asthma rate has been decreasing worldwide.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. A measure of pollutants in the air is a measure of _____.
22. _____ provides a monetary incentive for nations to develop technologies that will reduce emissions.
23. A _____ is a financial method of trying to reduce carbon dioxide emissions.
24. To remove carbon dioxide from the atmosphere, you could plant trees. This is one method of _____.
25. _____ is a heavy metal that bioaccumulates.
26. Nitrogen- and sulfur-oxides emitted from coal plants create _____.
27. To clear land for farming, forests may be burned in a process known as _____.
28. _____ can occur naturally from volcanic eruptions or windblown dust.

29. _____ is a greenhouse gas that is released with livestock wastes.

30. In the stratosphere, _____ screens out harmful ultraviolet radiation.

Short Answer

Answer each question in the space provided.

31. How do secondary pollutants come about?

32. What caused the ozone hole? What effect has the Montreal Protocol had on it?

33. Explain how cap-and-trade works.

CHAPTER

23

MS Observing and Exploring Space Assessments

Chapter Outline

- 23.1 TELESCOPES
 - 23.2 EARLY SPACE EXPLORATION
 - 23.3 RECENT SPACE EXPLORATION
 - 23.4 OBSERVING AND EXPLORING SPACE
-

23.1 Telescopes

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- To view the stars in the night sky you should use
 - an electron microscope
 - a refracting telescope
 - a magnifying glass
 - a radio telescope
- If you see a star that is 30,000 light years away, you are viewing it as it
 - appears right now
 - appeared 1 light year ago
 - appeared 30,000 years ago
 - appeared when it formed
- An electromagnetic wave
 - has an electric field and a magnetic field
 - oscillates between high and low energy values
 - is visible to the human eye
 - all of these
- Visible light is
 - a small part of the electromagnetic spectrum
 - the only wavelengths that come from most stars
 - best for observing astronomical objects
 - all of these
- The Greeks knew that planets were different from stars because they
 - are larger and brighter
 - move in the opposite direction
 - are not included in any constellations
 - wander across the background of the other stars

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. A light year is a measure of time.
- _____ 7. The most distant objects are viewed with radio waves.
- _____ 8. Radio telescopes can be linked together to gather more data on a space object.

_____ 9. The longer the wavelength, the higher the frequency.

_____ 10. Space telescopes are able to gather more types of waves than land-based telescopes.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A pattern of stars in the sky is a(n) _____.

12. A telescope that uses mirrors to collect and focus light is a(n) _____.

13. A(n) _____ is a scientist who uses telescopes and other tools to study the universe.

14. Hubble, a _____ telescope, has been in orbit since 1990

15. Starlight can be broken into colors by a(n) _____.

Short Answer

Answer each question in the space provided.

16. What can astronomers learn from the light spectrum of a star?

17. What are three observations that Galileo made with his (very primitive) telescope?

23.2 Early Space Exploration

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Voyager 1 is the first human-made object to
 - a. leave Earth's orbit
 - b. orbit the Sun
 - c. leave interstellar space
 - d. leave the solar system
2. Which of the following is one of Newton's Laws of Motion?
 - a. To every action, there is an equal and opposite reaction
 - b. An object in motion will remain in motion forever and always
 - c. Every object is attracted to every other object proportionately to its volume
 - d. Gravity equals mass times acceleration
3. A rocket has multiple stages so that it
 - a. can take humans into space
 - b. is able to orbit Earth
 - c. reduces the rocket's weight in steps
 - d. none of these
4. Which two countries were involved in the space race?
 - a. China India
 - b. U.S.A and U.S.S.R.
 - c. Brazil U.S.S.R.
 - d. U.S.A. U.K.
5. For a rocket to enter Earth orbit, it must be launched
 - a. at the right speed
 - b. from the right location
 - c. straight up
 - d. all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Only two nations have put a human on the moon: the U.S. and China.
- _____ 7. A satellite is an object that orbits a smaller object.
- _____ 8. It was only 12 years between when the first artificial satellite was launched and Neil Armstrong walked on the Moon.

- _____ 9. An object can go into orbit because of the law of conservation of momentum.
- _____ 10. Newton's Third Law of Motion helps explain how a rocket will travel in space.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The president who challenged the US to put a man on the moon was _____.
12. A _____ is an unmanned spacecraft that collects data on objects in space.
13. The path a satellite takes around an object is its _____.
14. The launch of spacecraft _____ ignited the Space Race.
15. If you multiply mass times acceleration, you get _____.

Short Answer

Answer each question in the space provided.

16. How does a rocket move through the vacuum of space?

17. How did the conflict between the U.S. and the U.S.S.R. lead to Neal Armstrong's step on the Moon?

23.3 Recent Space Exploration

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. The International Space Station has had people on board since _____.
 - a. 1969
 - b. 1989
 - c. 2000
 - d. 2008
2. A space station is
 - a. launched and constructed in pieces
 - b. designed for defense purposes
 - c. home to astronauts from one country at a time
 - d. none of these
3. What features make a space shuttle unique?
 - a. It can explore the inner solar system.
 - b. It can haul cargo into space.
 - c. It can fly like an airplane.
 - d. It can land on the moon and return.
4. If you want to see what happened to a lake before and after a hurricane, you would use
 - a. geospatial satellites
 - b. Landsat images
 - c. rovers.
 - d. none of these
5. Smaller solar system objects, like asteroids, may give us clues as to
 - a. how the solar system formed
 - b. what planets are made of
 - c. when the solar system formed
 - d. all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. One purpose of the International Space Station is to conduct medical research.
- _____ 7. Private companies are increasingly getting into space exploration.
- _____ 8. There are currently rovers on Venus and Mars.

_____ 9. The mission of NASA is to study everything in the solar system except Earth.

_____ 10. The record for one crew inhabiting a space station is ten years.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Besides studying other solar system bodies, NASA satellites keep an eye on planet _____.

12. If you wanted to live for several months in space, you would try to get aboard a(n) _____.

13. The part of the space shuttle that comes back to Earth with astronauts aboard is the _____.

14. Humans are currently in orbit around Earth in the _____.

15. Besides Earth, the planet we know the most about is _____.

Short Answer

Answer each question in the space provided.

16. What caused the accidents that brought down two space shuttles and killed their crews?

17. Why are satellites important for understanding changes on Earth? Give an example.

23.4 Observing and Exploring Space

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- How long does it take sunlight to get from the Sun to Earth?
 - 8 seconds
 - 8 minutes
 - 8 hours
 - 8 days
- After the sun, which star is closest to us?
 - Proxima Centauri
 - Sirius
 - Polaris
 - Betelgeuse
- The distance between two adjacent oscillations is called a(n)...
 - wavelength
 - frequency
 - amplitudes
 - crest
- Which telescopes are best for the viewing the surface of Earth's moon?
 - refracting telescope
 - reflecting telescope
 - radio telescope
 - none of the above
- Who created the first reflecting telescope?
 - Galileo
 - Sir Isaac Newton
 - Hermann Oberth
 - John Herschel
- With his first telescope, Galileo could see
 - stars outside our galaxy
 - the orbiting moons of Mars
 - sunspots
 - all of these
- The United States space program has
 - spacecraft out beyond the edges of the solar system

- b. rovers on Mars
 - c. satellites around the inner planets
 - d. all of these
8. Satellite studying Earth can tell us
- a. how Earth systems affect one another
 - b. what the weather will be like in a region
 - c. how the planet changes over time
 - d. all of these
9. The Milky Way is
- a. the galaxy closest to Earth
 - b. about 100 light years across
 - c. contains fewer stars than other galaxies
 - d. none of these
10. A reflecting telescope collects more light than a refracting telescope so it can see
- a. larger objects
 - b. colder objects
 - c. more distant objects
 - d. younger objects

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Cassini found life on Saturn's moon Titan.
- _____ 12. Visible light is a large part of the electromagnetic spectrum.
- _____ 13. Very hot stars emit light in the ultraviolet.
- _____ 14. The earliest telescopes were refracting telescopes.
- _____ 15. The United States launched Sputnik in 1957.
- _____ 16. President Kennedy challenged the Soviet Union to a Cold War.
- _____ 17. All five space shuttles returned to Earth safely.
- _____ 18. The International Space Station has housed scientists from the US, Russia and elsewhere.
- _____ 19. Early space exploration success was due to cooperation between the United States and the USSR.
- _____ 20. Rockets must be launched straight up to escape Earth's gravity.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. Light is one type of _____ energy.
22. A(n) _____ is the distance that light travels in one year.
23. _____ measures the number of wavelengths that pass a given point every second.
24. Radio telescopes collect and focus _____ waves.
25. The Ancient Greeks called bright bodies that wander across the night sky _____.
26. _____ are patterns of stars in the sky.
27. A(n) _____ is any object that orbits a larger object.
28. Astronaut Neal Armstrong stepped on the moon in July of _____.

29. A _____ is an unmanned spacecraft that collects data by flying near or landing on an object in space.
30. The Cassini mission has been studying the planet _____.

Short Answer

Answer each question in the space provided.

31. Why is a telescope in Earth orbit better than one on Earth's surface?

32. How did Galileo's observations change people's view of the universe?

33. What can an astronomer learn from the spectrum of a star?

CHAPTER **24** **MS Earth, Moon, and Sun Assessments**

Chapter Outline

- 24.1 PLANET EARTH
 - 24.2 EARTH'S MOON
 - 24.3 THE SUN
 - 24.4 THE SUN AND THE EARTH-MOON SYSTEM
 - 24.5 EARTH, MOON, AND SUN
-

24.1 Planet Earth

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. An imaginary line running through the poles of Earth is called
 - a. orbit
 - b. pole
 - c. magnetic pole
 - d. axis
2. How long does it take the Earth to make one rotation on its axis?
 - a. one day
 - b. one month
 - c. one year
 - d. one week
3. How many degrees does the Earth turn in one day?
 - a. 90 degrees
 - b. 180 degrees
 - c. 360 degrees
 - d. 1080 degrees
4. What causes Earth's seasons?
 - a. the planet's rotation
 - b. the planet's tilt
 - c. the planet's revolution
 - d. the planet's orbit
5. Earth's magnetic field is due to
 - a. the movement of metal in Earth's outer core
 - b. a bar magnet that is lodged between the magnetic poles
 - c. the force of the Sun's magnetic field
 - d. mantle convection

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Earth is divided into four hemispheres.
- _____ 7. Leap year is needed because Earth takes more than 365 days to orbit the Sun.
- _____ 8. Earth gets more gravitational pull from the Sun than the Moon because it is larger.

_____ 9. The planets move in fixed paths around the Sun.

_____ 10. The Earth's mostly iron crust produces the magnetic field.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The region between the equator and South Pole is the _____

12. One _____ of Earth takes one day.

13. Earth's path around the sun is in the shape of a(n) _____ .

14. In Northern Hemisphere summer, the _____ points toward the Sun.

15. $23\frac{1}{2}^\circ$ is Earth's _____

Short Answer

Answer each question in the space provided.

16. How does Foucault's pendulum show that Earth rotates on its axis?

17. What evidence does a ship moving away from shore give that Earth is round?

24.2 Earth's Moon

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- The flat dark areas on the Moon are
 - lavas
 - dried lake beds
 - dried ocean basins
 - seawater
- What are the lighter areas on the Moon?
 - maria
 - craters
 - lakes
 - mountain ranges
- What is the dominant feature on the lunar surface?
 - volcanoes
 - craters
 - river basins
 - fault lines
- The Moon has more extreme temperatures than Earth because it
 - is closer to the Sun
 - rotates faster on its axis
 - doesn't have an atmosphere
 - has higher internal heat
- The interior structure of the Moon is
 - exactly like Earth's
 - higher in metal
 - different on the near and far sides
 - the same, but with less core

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The Moon is Earth's only natural satellite.
- _____ 7. Most of the maria are on the Moon's near side.
- _____ 8. The lunar crust is thicker on the far side than on the near side.

_____ 9. The Moon rotates on its axis once for every orbit it makes around the Sun.

_____ 10. You would weigh six times as much on the Moon as on Earth.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A smaller body that moves around a larger body in space is a(n) _____

12. You would weigh much less on the Moon than Earth because _____ is lower.

13. A(n) _____ results from meteorite impacts on the surface of an object.

14. The lunar highlands are called _____.

15. Lunar craters were created by impacts from _____.

Short Answer

Answer each question in the space provided.

16. When and how were the maria created?

17. What are the two reasons that the Moon has so many more craters than Earth?

24.3 The Sun

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. The layer that shows beyond the Moon in a solar eclipse is the
 - a. corona
 - b. photosphere
 - c. radiative zone
 - d. prominence zone
2. Which layer of the Sun contains slow moving photons?
 - a. corona
 - b. core
 - c. radiative zone
 - d. convection zone
3. Most atoms in the Sun exist as
 - a. photons
 - b. plasma
 - c. light
 - d. silicate minerals
4. The energy that powers the Sun comes from
 - a. hydrogen fusing into helium
 - b. radioactivity
 - c. helium fusing into heavier elements
 - d. nuclear fission
5. Cool areas where the magnetic field disrupts the surface are
 - a. solar flares
 - b. solar prominences
 - c. solar winds
 - d. sunspots

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The Sun's core is molten metal.
- _____ 7. A solar flare can knock out power grids on Earth.
- _____ 8. The Sun makes up 99.8% of the mass of the solar system.

_____ 9. The Sun does not have a defined outer boundary.

_____ 10. Plasma is a solid.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A(n) _____ is a plasma loop flowing between sunspots.

12. The _____ is the visible surface of the Sun.

13. Sunspots occur in cycles lasting _____ years.

14. Violent explosions from the Sun's magnetic field that release energy are _____.

15. Highly energetic particles streaming away from the Sun make up the _____

Short Answer

Answer each question in the space provided.

16. Describe the three internal layers of the Sun.

17. Describe the three layers of the Sun's atmosphere.

24.4 The Sun and the Earth-Moon System

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What are the two distinct parts of Earth's shadow during a solar eclipse?
 - a. light and dark
 - b. panera and umbrella
 - c. umbra and penumbra
 - d. inner and outer
2. If the Moon is more than half lit, but the left side is dark, the phase is
 - a. first quarter
 - b. waxing gibbous
 - c. waning gibbous
 - d. last quarter
3. When the full moon moves through Earth's shadow, what occurs?
 - a. solar eclipse
 - b. high tide
 - c. low tide
 - d. lunar eclipse
4. A quarter moon is
 - a. halfway between a full moon and a new moon
 - b. two weeks after a full moon
 - c. when one quarter of the moon you see is lit
 - d. when one quarter of the moon you see is dark
5. What is the moon called when it is more than half lit?
 - a. a harvest moon
 - b. a blue moon
 - c. a crescent moon
 - d. a gibbous moon

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. A lunar eclipse generally lasts between 5-10 minutes.
- _____ 7. Birds may become confused during a solar eclipse and think that it is nighttime.
- _____ 8. During a total lunar eclipse the moon is entirely dark.

_____ 9. A solar eclipse is seen on all of the Earth that is having daytime.

_____ 10. The time between two full moon phases is 29.5 days.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A(n) _____ moon is when the moon is 51 – 99% full.

12. A(n) _____ is the outer part of the shadow that remains partially lit during an eclipse.

13. A(n) _____ is when the Moon falls into the shadow of the Earth.

14. If the Moon is between Earth and Sun and the nearside is dark, it is a(n) _____

15. The moon is less than half lit during its _____ phase.

Short Answer

Answer each question in the space provided.

16. Where are the Earth, Moon and Sun relative to each other during a solar eclipse?

17. What causes a lunar eclipse?

24.5 Earth, Moon, and Sun

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. The Sun moves which way across the sky?
 - a. North to South
 - b. East to West
 - c. West to East
 - d. South to North
2. The Sun has less effect on tides than the Moon because
 - a. the Sun has less gravity
 - b. the Moon is so much larger
 - c. the Sun is so much farther away
 - d. the Sun's effect is cancelled out by the Moon's effect
3. Why does the Earth have seasons?
 - a. its tilt
 - b. its elliptical orbit
 - c. its rotation
 - d. its magnetic field
4. Conditions on the Moon are
 - a. extremely wet and dry
 - b. very stormy near the equator
 - c. extremely hot and extremely cold
 - d. very like on Earth
5. Water on the Moon is found as
 - a. vapor in the atmosphere
 - b. liquid in soil
 - c. ice in deep craters
 - d. vapor, liquid and ice like on Earth
6. The far side of the Moon
 - a. is the same as the near side
 - b. faces us only at night
 - c. faces us only in the day
 - d. has only been seen by spacecraft
7. What is the visible surface of the sun?
 - a. photosphere

- b. chromosphere
 - c. corona
 - d. none of the above
8. The movement of molten metal in the outer core results in
- a. plate tectonic motions
 - b. volcanism
 - c. the auroras
 - d. the magnetic field
9. Solar flares
- a. release large amounts of radiation
 - b. can knock out entire power grids
 - c. can knock out communications
 - d. All of the above
10. One of these is true about the geology of the Moon.
- a. The light colored mountains crystallized from magma.
 - b. The dark colored lavas erupted from mantle convection.
 - c. The craters are parts of volcanoes.
 - d. The features are very similar to those found on Earth.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. The magnetic field protects Earth from harmful radiation.
- _____ 12. Earth's orbital path is an ellipse.
- _____ 13. Earth's orbit causes its seasons.
- _____ 14. The Moon is Earth's only natural satellite.
- _____ 15. The chromosphere is much hotter than the photosphere.
- _____ 16. Solar prominences are only visible during a total eclipse.
- _____ 17. The summer solstice occurs on July 21.
- _____ 18. A lunar eclipse occurs when a full moon moves through the Earth's shadow.
- _____ 19. Flat areas of basaltic rock are characteristic of the terrae areas of the Moon.
- _____ 20. Earth is the only planet known to have liquid water.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. The Northern Hemisphere summer solstice occurs in the month of _____.
22. The Moon's surface has been altered tremendously by the _____ left by meteorite impacts.
23. The lunar maria are made of _____.
24. The fourth state of matter made up of superheated gas with a positive electrical charge is called _____.
25. _____ are cooler, darker areas on the Sun.
26. _____ are violent eruptions that release huge amounts of energy.
27. The more massive an object the greater the pull of its _____.
28. A _____ occurs when the new moon passes directly between the Earth and the Sun.

29. Earth's shadow has two distinct parts: the _____ and _____.
30. Earth's _____ shields the planet from harmful solar radiation.

Short Answer

Answer each question in the space provided.

31. Describe the phases of the Moon from full to new.

32. What are sunspots and what causes them?

33. What causes Earth's seasons?

CHAPTER **25**

MS The Solar System Assessments

Chapter Outline

- 25.1 INTRODUCTION TO THE SOLAR SYSTEM
 - 25.2 INNER PLANETS
 - 25.3 OUTER PLANETS
 - 25.4 OTHER OBJECTS IN THE SOLAR SYSTEM
 - 25.5 THE SOLAR SYSTEM
-

25.1 Introduction to the Solar System

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- The planets appear to move
 - in the same direction as the stars
 - some with and some opposite the stars
 - in a circular motion
 - sometimes with and sometimes opposite the stars
- The model that put the Sun at the center of the universe was proposed by
 - Aristotle
 - Galileo
 - Copernicus
 - Ptolemy
- Extrasolar planets are found by
 - the wobble of a star on its axis
 - the periodic dimming in of a star
 - being visible through a telescope
 - the excess gravity of a star
- All of the planets in the solar system
 - lie in the same plane
 - are made mostly of rocks and metals
 - rotate in the same direction
 - all of these
- The force of gravity between objects depends on their mass and _____
 - acceleration
 - distance apart
 - gravitational potential energy
 - density

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. If you know a planet's orbit you can determine its approximate distance from the Sun.
- _____ 7. The planets in order from the Sun are Mars, Venus, Earth, Mercury, Saturn, Uranus, Jupiter and Neptune.
- _____ 8. The orbits of the planets are circular.

_____ 9. One astronomical unit is the distance from Earth to Sun.

_____ 10. All of the planets in the solar system rotate in the same direction.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The widely accepted explanation for how the solar system formed is the _____.

12. The _____ is the center of the solar system.

13. The 2nd largest object in the solar system is _____.

14. Ptolemy thought that the _____ was at the center of the universe.

15. Pluto is classified as a(n) _____.

Short Answer

Answer each question in the space provided.

16. What are the four characteristics a planet must have?

17. How did the Sun form the solar nebula?

25.2 Inner Planets

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What explains the number of impact craters on Mercury?
 - a. It is very close to the Sun.
 - b. The craters have been overrun by lava flows.
 - c. It is not geologically active.
 - d. It is subject to constant storms.
2. The largest volcano in the solar system is a _____ volcano on the planet _____.
 - a. Mars; composite
 - b. Mars; shield
 - c. Venus; composite
 - d. Venus; shield
3. What is true of life on the inner planets?
 - a. Earth's Moon had life in ancient oceans.
 - b. Venus has microbes beneath its thick atmosphere
 - c. Mars has ancient fossil microbes
 - d. There is only life on Earth
4. Why is Venus the hottest planet?
 - a. It is closest to the Sun
 - b. It has a powerful greenhouse effect.
 - c. It has the most internal heat
 - d. It spins the fastest.
5. Evidence for liquid water in the Martian past includes
 - a. water-eroded canyons
 - b. fossil fish
 - c. the presence of polar ice currently
 - d. all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. All of the inner planets were once geologically active.
- _____ 7. Venus has the largest greenhouse effect of the inner planets.
- _____ 8. Venus is the only inner planet with a large moon besides Earth.

- _____ 9. Besides Earth, the inner planets are all solid.
- _____ 10. The inner planets spin faster than the outer planets.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Large volcanoes surrounded by plains of lava describes the surface of _____.
12. The main rock type of the inner planets is _____.
13. The deepest canyon in the solar system is on the planet _____.
14. The planet most similar to Earth in size and density is _____.
15. The planet with the most volcanoes is _____.

Short Answer

Answer each question in the space provided.

16. If humans wanted to build a colony on another planet, which should they choose and why?

17. Which of the inner planets (besides Earth) is most likely to have once had life and why?

25.3 Outer Planets

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- The heat to create liquid water on Europa is from
 - radioactive decay
 - its molten core
 - the Sun
 - the gravitational pull of Jupiter
- Why are Saturn's rings?
 - ice and dust
 - a broken up moon
 - a magnetic field
 - captured asteroids
- What is the Great Red Spot?
 - Iron oxide in the asteroid belt
 - A giant storm on Jupiter
 - The planet Mars
 - An enormous volcano on Neptune
- How was Neptune discovered?
 - through a radio telescope
 - by the Hubble Space telescope
 - Uranus' orbit was unexpected
 - because it wanders across the sky like the other planets
- Why are Uranus and Neptune blue?
 - They are composed of solid water ice.
 - Methane in their atmosphere filters out red light.
 - They are covered by blue oceans.
 - They are covered by blue algae.

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. It takes Jupiter 5 Earth years to make one orbit around the Sun.
- _____ 7. Most moons in the solar system are captured asteroids.
- _____ 8. Jupiter's four largest moons are larger than the dwarf planet Pluto.

- _____ 9. Astronauts have tested samples from Europa for signs extraterrestrial life.
- _____ 10. Saturn is unique because it is the only planet with rings.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The planet that is tilted on its side is _____.
12. Jupiter's is made mostly of _____ with some helium and methane.
13. The planets beyond the asteroid belt are known as the _____.
14. The planet that is less dense than water is _____.
15. The liquid on Europa is probably mostly _____.

Short Answer

Answer each question in the space provided.

16. Galileo saw the Great Red Spot through his telescope. What is it and what is the significance of this fact?

17. Why is Europa a good place to look for extraterrestrial life?

25.4 Other Objects in the Solar System

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Near-Earth asteroids
 - a. have orbits that cross Earth's
 - b. number more than 4,500
 - c. could strike Earth
 - d. all of these
2. Which two planets does the asteroid belt fall between?
 - a. Earth Mars
 - b. Mars Jupiter
 - c. Jupiter Neptune
 - d. Mercury Venus
3. Why do scientists value meteorites?
 - a. They are material from the earliest solar system.
 - b. They are an important source of valuable metals.
 - c. They contain metals not otherwise found on Earth.
 - d. none of these
4. What is the asteroid belt?
 - a. It is a large planet that was broken apart by an asteroid impact.
 - b. It is where the Sun's gravity is perfect for asteroids.
 - c. It is debris that couldn't form a planet due to Jupiter's gravity.
 - d. none of these
5. Why is the dwarf planet Ceres not classified as a large asteroid?
 - a. it is rounded
 - b. it is too large
 - c. it does not have craters
 - d. it is a moon of Pluto

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. All shooting stars become meteorites.
- _____ 7. Comet orbits are similar in shape to planet orbits.
- _____ 8. The longest period comets come from the Kuiper belt.

_____ 9. Any object whose orbit crosses Earth's can collide with Earth.

_____ 10. Halley's Comet is it expected to return in 2061.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. The scientific term for a shooting star is a(n) _____.

12. When a space rock strikes Earth, it is a(n) _____.

13. A rocky body that has not yet entered Earth's atmosphere is a(n) _____.

14. Pluto's orbit is located in in the _____.

15. When Earth passes through a comet trail we experience a(n) _____.

Short Answer

Answer each question in the space provided.

16. Why do comets have tails?

17. Why is Pluto a dwarf planet, but not a planet any more?

25.5 The Solar System

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What observation did Galileo make to support the Copernican model of the solar system?
 - a. Venus orbits the Sun
 - b. Moons orbit Jupiter
 - c. The planets have elliptical orbits
 - d. None of these
2. Which planet has the longest year?
 - a. Jupiter
 - b. Saturn
 - c. Uranus
 - d. Neptune
3. If you know a planet's orbital period you can determine its
 - a. composition
 - b. age
 - c. distance from the Sun
 - d. rotation rate
4. The asteroid belt is most likely
 - a. a failed planet
 - b. a large planet that broke apart
 - c. something that formed at the beginning of the solar system
 - d. no one knows
5. All of the outer planets are primarily composed of what elements?
 - a. hydrogen and helium
 - b. hydrogen and carbon
 - c. carbon and neon
 - d. lithium and carbon
6. Jupiter has
 - a. exactly the composition of the Sun.
 - b. a storm that has been active for at least 300 years
 - c. a total of four moons
 - d. all of these
7. How long does it take the Earth to revolve around the Sun?
 - a. 29.5 days

- b. 24 hours
 - c. 365.24 days
 - d. 1 month
8. What is the most likely place for extraterrestrial life in the solar system?
- a. the surface of Venus
 - b. the Great Dark Spot of Neptune
 - c. the moon of a gas giant
 - d. nowhere. There is no chance of finding extraterrestrial life in the solar system.
9. What could Pluto-Charon be classified as?
- a. two asteroids
 - b. a double dwarf planet
 - c. a planet and a moon
 - d. a planet and a dwarf planet
10. Neptune's appearance is always changing because
- a. its temperature rises above and falls below the freezing point of water.
 - b. its dark spots are on an 11-year cycle
 - c. it has strong seasons
 - d. it has an extremely turbulent atmosphere

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Neither the Earth nor our Sun is at the center of the universe.
- _____ 12. More than a million exoplanets have been identified.
- _____ 13. Besides Earth, Mars is the only planet in the solar system with liquid water.
- _____ 14. A day is longer than a year on Venus.
- _____ 15. The outer planets all have a lot of weather.
- _____ 16. Mars is red due large amounts of iron in the soil.
- _____ 17. In the Ancient Greek model, the planets and stars are in spheres around Earth.
- _____ 18. The Kuiper Belt is the home of short-period comets.
- _____ 19. Saturn's rings probably formed from the breakup of one of its moons.
- _____ 20. Neptune was knocked sideways by a collision with a giant asteroid.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. Long period comets come from the _____ cloud.
22. A _____ is a giant cloud of gas and dust.
23. Venus is extremely hot due to _____.
24. The only inner planet with a large natural satellite is _____.
25. The solar system body, _____, may have a liquid ocean.
26. The planet most like Earth is _____.
27. Uranus and Neptune are blue due to _____.
28. _____ is also known as the morning star and the evening star.

29. Bodies that move forward across the sky, then reverse, then move forward again are _____
30. Small, icy objects that have very elliptical orbits around the Sun are called _____.

Short Answer

Answer each question in the space provided.

31. How do scientists discover extrasolar planets?

32. What observations did the nebular hypothesis need to explain about the solar system?

33. What information do meteorites contain? Why are they so valuable to scientists?

CHAPTER **26** MS Stars, Galaxies, and the Universe Assessments

Chapter Outline

- 26.1 STARS
 - 26.2 GALAXIES
 - 26.3 THE UNIVERSE
 - 26.4 STARS, GALAXIES, AND THE UNIVERSE
-

26.1 Stars

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Particle collisions in accelerators simulate
 - a. nuclear fission in a black hole
 - b. fusion of hydrogen into helium
 - c. the conditions of the birth of the universe
 - d. all of these
2. Stars emit energy as
 - a. neutrino streams
 - b. radio waves
 - c. solar wind
 - d. electromagnetic radiation
3. When our Sun stops fusion it will first become a(n)
 - a. red giant
 - b. red supergiant
 - c. white dwarf
 - d. blue neutron star
4. What is the energy source for all stars?
 - a. nuclear fusion
 - b. nuclear fission
 - c. solar
 - d. hydrothermal
5. Energy production in a star takes place in the
 - a. convective zone
 - b. core
 - c. radiative zone
 - d. corona

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The hottest stars blue-white; the coolest stars are red.
- _____ 7. Stars in a constellation are near each other in space.
- _____ 8. Our Sun is about half way through its life span.

_____ 9. A black hole emits dark electromagnetic radiation that we cannot see.

_____ 10. The same constellations appear in a location all year-round.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. A small to mid-sized star that has collapsed is called a(n) _____.

12. A star that is fusing hydrogen into helium is a(n) _____ star.

13. An explosion of a red giant star results in a(n) _____.

14. A group of stars that appear in close proximity is a(n) _____.

15. Astronomers can calculate the distance to a star by observing its _____.

Short Answer

Answer each question in the space provided.

16. How do the elements heavier than helium form?

17. What is a black hole? How do astronomers locate them?

26.2 Galaxies

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. A galaxy can contain how many stars?
 - a. up to 500
 - b. up to 30,000
 - c. up to 10 million
 - d. up to many billions
2. How are irregular galaxies deformed?
 - a. from collisions with other galaxies
 - b. from gravitational pull from a black hole
 - c. from extremely rapid spin
 - d. from extremely rapid formation
3. Most elliptical galaxies have very little gas and dust because
 - a. they are very young
 - b. the dust and gas have already formed stars
 - c. the dust and gas is pulled into supermassive black holes at the center
 - d. none of these
4. Spiral galaxies have
 - a. only old stars
 - b. fewer stars than globular clusters
 - c. a bulge at the center
 - d. an elliptical shape
5. Globular clusters
 - a. have a lot of dust in them
 - b. contain a few hundred to a few thousand stars
 - c. contain mostly reddish stars
 - d. all of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. The Milky Way appears as a band of light across the night sky.
- _____ 7. Most of the galaxies we see from Earth are dwarf galaxies.
- _____ 8. Elliptical galaxies have mostly younger blue stars.

_____ 9. Every star that you without a telescope is in the Milky Way Galaxy.

_____ 10. Our solar system is slowly spinning around our galaxy.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. Why would two galaxies collide? _____

12. Two stars in a solar system is a(n) _____.

13. Earth resides in the _____ Galaxy.

14. A relatively small collection of young blue stars is a(n) _____.

15. Stars are grouped closely together into _____.

Short Answer

Answer each question in the space provided.

16. Describe the three types of galaxies.

17. Describe the Milky Way Galaxy and Earth's place in it.

26.3 The Universe

Lesson Quiz

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What explains the phenomenon that Hubble discovered?
 - a. the universe is becoming warmer
 - b. the universe is becoming cooler
 - c. the universe is expanding
 - d. the universe is collapsing
2. Scientists believe dark energy can explain what phenomenon?
 - a. the creation of the universe
 - b. the increasing rate of expansion of the universe
 - c. the collapse of the universe
 - d. the shape of the universe
3. The farther away a galaxy is
 - a. the faster it is moving away from us
 - b. the slower it is moving away from us
 - c. the faster it is coming toward us
 - d. the slower it is coming toward us
4. What does it mean if light is red shifted?
 - a. The object is moving away from the observer
 - b. The object is moving towards the observer
 - c. The object is slowing down
 - d. The object is moving perpendicular to the observer
5. The outside edges and interior of a galaxy rotate at the same speed. This is evidence for the existence of
 - a. gravitational lensing
 - b. the Big Bang
 - c. dark energy
 - d. dark matter

True or False

Write true if the statement is true or false if the statement is false.

- _____ 6. Redshift is the shift of absorption bands toward the red end of the spectrum.
- _____ 7. Hubble's Law states, the farther away a galaxy is, the faster it is moving away from us.
- _____ 8. Redshift was discovered by Edwin Hubble.

- _____ 9. The nature of dark matter is unknown.
- _____ 10. The universe contains about a hundred million galaxies.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

11. _____ is a form of energy that has not been seen.
12. The theory that explains how the universe began is _____.
13. The _____ is everything.
14. The Big Bang took place around _____ years ago.
15. The first element to form after the big bang was _____.

Short Answer

Answer each question in the space provided.

16. What is the big bang theory?

17. What are two lines of evidence for the Big Bang origin of the universe?

26.4 Stars, Galaxies, and the Universe

Chapter Test

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- The main way to classify a star is by
 - size
 - temperature
 - age
 - color
- What powers a main sequence star?
 - the fusing of helium into the heavier elements
 - nuclear fission reactions
 - the fusing of hydrogen into helium
 - a supernova explosion
- What is the color of the coolest stars?
 - yellow
 - blue
 - orange
 - red
- The Sun will likely end its life as a
 - red giant
 - black hole
 - white dwarf
 - supernova
- A star forms from
 - a nebula
 - particles of rock and metal that smash together
 - a supernova explosion
 - none of these
- Evidence for the Big Bang includes
 - the background energy of the universe
 - blue shift, indicating that the universe is expanding
 - ancient matter that appears in stardust
 - none of these
- Galaxies are
 - made of billions to trillions of stars

- b. stationary in space
 - c. elliptical, spiral or irregular
 - d. none of these
8. What did the Andromeda Nebula turn out to be?
- a. a galaxy
 - b. a gas cloud
 - c. the farthest galaxy that astronomers can see
 - d. none of these
 - e. the law of reverse gravitation
9. The farther away a galaxy, the faster it is moving away from us is
- a. Hubble's Law
 - b. the Big Bang Theory
 - c. the Doppler Effect
10. Spiral galaxies are
- a. stationary discs
 - b. the smallest galaxies
 - c. made of many young stars
 - d. made of mostly old stars

True or False

Write true if the statement is true or false if the statement is false.

- _____ 11. Blue stars are the oldest stars.
- _____ 12. Stars have a life cycle.
- _____ 13. The element helium comes from nuclear fusion of hydrogen.
- _____ 14. A neutron star is made almost entirely of neutrons.
- _____ 15. Black holes are so dense that light cannot escape.
- _____ 16. Galaxies are divided into three types according to their shape.
- _____ 17. The Sun is a very large very bright star.
- _____ 18. The Big Bang Theory is the scientific explanation for how the universe formed.
- _____ 19. Dark matter can be observed even though it emits no electromagnetic radiation.
- _____ 20. Dark energy is found at the center of black holes.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

21. A _____ is a giant ball of glowing gas.
22. The heavy elements formed in _____ explosions.
23. A deformed galaxy is a(n) _____ galaxy.
24. The _____ contains all the matter and energy in existence.
25. Stars are composed of hydrogen and _____.
26. The _____ of light from galaxies means that the universe is expanding.
27. A pattern of stars in the sky is a(n) _____.
28. _____ are groups of young stars held together by gravity.

29. _____ are collections of millions to many billions of stars.
30. _____ are spherical groups of old stars held together by gravity.

Short Answer

Answer each question in the space provided.

31. What is a supernova? Why are they important?

32. Our Sun is an ordinary star. What does this mean?

33. Describe the location of planet Earth as accurately as you can.

CHAPTER **27**

MS Earth Science Unit Assessments

Chapter Outline

- 27.1 UNIT 1: INTRODUCTION TO THE STUDY OF EARTH TEST
 - 27.2 UNIT 2: EARTH'S MINERAL AND ENERGY RESOURCES TEST
 - 27.3 UNIT 3: PROCESSES INSIDE EARTH TEST
 - 27.4 UNIT 4: PROCESSES ON EARTH'S SURFACE TEST
 - 27.5 UNIT 5: EARTH'S PAST TEST
 - 27.6 UNIT 6: EARTH'S WATER TEST
 - 27.7 UNIT 7: WEATHER AND CLIMATE TEST
 - 27.8 UNIT 8: THE ENVIRONMENT AND HUMAN ACTIONS TEST
 - 27.9 UNIT 9: ASTRONOMY TEST
-

27.1 Unit 1: Introduction to the Study of Earth Test

Unit 1 chapters: *What is Earth Science?* and *Studying Earth's Surface*

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which of the following is the longest mountain range on Earth?
 - mid-ocean ridge
 - Andes
 - Great Dividing Range
 - Himalayas
- Computers work in conjunction with satellites
 - by using satellite data to generate maps
 - by allowing the viewing of fine details on satellites images
 - by helping to store and link data from satellites
 - all of the above
- Which of the following is not created by constructive forces?
 - Mt. Fuji
 - Mt. Everest
 - Barringer (aka Meteorite) Crater in Arizona
 - East African Rift
- What is the main disadvantage of a Mercator projection?
 - distortion near the equator
 - distortion of landmasses
 - distortion near the poles
 - true direction is not shown
- Latitude and longitude is
 - A coordinate system
 - One way of finding locations on Earth
 - Measured relative to 0-degree lines
 - All of the above
- Which of these coordinates is not valid?
 - $41^{\circ}52'55''\text{N } 87^{\circ}37'40''\text{W}$
 - $S 22.90^{\circ}, W 43.20^{\circ}$
 - $N 98.33^{\circ}, W 76.15^{\circ}$
 - $0^{\circ}0'00''\text{N } 0^{\circ}0'00''\text{W}$
- Which of the following scientists would most likely study hurricanes?
 - hydrologist
 - meteorologist
 - geochemistry
 - paleontology

8. Which of the following should not be done in the laboratory?
 - a. wearing goggles
 - b. tying long hair back
 - c. keeping your area clean
 - d. eating and drinking
9. Think about this question: What is the most absorbent paper towel?
 - a. This is a question that can be answered using the scientific method.
 - b. This cannot be answered via the scientific method, but it could be explained using a model.
 - c. This is not a question that science can address.
 - d. Scientists do not care about paper towels.
10. What is the goal of science?
 - a. Answer all questions.
 - b. Explain how things work.
 - c. Understand the natural world.
 - d. Find a cure for cancer.
11. Which is a hypothesis to the question: “What type of soil is most porous?”
 - a. Porosity of rocks varies.
 - b. Limestone is the most porous rock.
 - c. A scientist cannot know this until after the experiment.
 - d. The scientific method cannot be used to answer this question.
12. A scientist is conducting an experiment to determine which of three building structure types will best withstand the force of an earthquake. Which of the following is the best “independent variable” he might use?
 - a. The magnitude of the earthquake
 - b. The structure of the building
 - c. The type of soil each building is sitting on
 - d. The amount of damage each building receives.
13. A Gnomonic Projection
 - a. Uses a cylinder to create the projection
 - b. Uses a paper that touches only one point or tangent
 - c. Is good mainly for large areas like an entire hemisphere
 - d. Uses a cone shaped wrapping to project the map
14. A geological map
 - a. uses colors to show different types of rocks
 - b. will often use a cut away diagram
 - c. can be large or small scale
 - d. all of the above
15. A gentle slope is shown on a contour map by contour lines
 - a. that cross
 - b. that are not close together
 - c. that are randomly spaced
 - d. with a large contour interval

True or False

Write true if the statement is true or false if the statement is false.

_____ 16. Research is not essential to the scientific process.

- _____ 17. The field of oceanography consists entirely of the movements of seawater and its chemical composition.
- _____ 18. A map is not a good example of a physical model.
- _____ 19. A well developed idea can be a model.
- _____ 20. Seismology is the study of earthquakes.
- _____ 21. In the science lab, it is important to follow directions at all times.
- _____ 22. In the field, it is not necessary to have a first aid kit.
- _____ 23. A scientific question must be testable.
- _____ 24. Volcanic eruptions are an example of a constructive force.
- _____ 25. Constructive forces cause landforms to grow

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

26. The Marianas Trench is the deepest _____ in the world.
27. The first map projection was developed by Gerardus _____ in 1569.
28. On a globe, the shortest distance between two points is a(n) _____.
29. A chart used to locate an underwater shipwreck is a(n) _____.
30. A weather satellite travels around Earth in a _____ orbit.
31. The two main surface features are ocean basins and _____.
32. A plausible explanation to a scientific question is a(an) _____.
33. The branch of Earth science that interests me most is _____.
34. _____ maps show elevations using contour lines to reveal landforms.
35. Why are there more earthquakes in India than in South Africa? is a(n) _____.

Short Answer

Answer each question in the space provided.

36. Why are four satellites required by the GPS system to determine your location?

37. What does a geologist study?

38. What is peer review? Why is it important to the scientific community?

39. List 4 major branches of Earth Science and explain how they relate to the Earth.

40. What is GIS and why is it useful?

27.2 Unit 2: Earth's Mineral and Energy Resources Test

Unit 2 chapters: *Earth's Minerals, Rocks* and *Earth's Energy*

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which statement is false?
 - Silicates are the largest group of minerals
 - oxides contain oxygen
 - halides are another name for salts
 - substances with only one atom cannot be classified as minerals
- Which is rarely very useful for mineral identification?
 - cleavage
 - color
 - luster
 - hardness
- Which of the following is not a mineral?
 - coal
 - diamond
 - table salt
 - quartz
- Why does the igneous rock obsidian have no visible crystals?
 - The magma cooled very deep underground.
 - The magma exploded onto the surface.
 - The magma cooled too rapidly.
 - none of these
- An ore deposit is
 - easy to mine
 - profitable to mine
 - a mineral deposit in which the price is rising
 - always made of different metals
- Deposits of minerals in the cracks of rocks are called
 - geodes
 - solutions
 - veins
 - tufa towers
- Weathering breaks rocks down into
 - minerals
 - crystals
 - sediments
 - rocklets

8. During metamorphism, extreme pressure often leads to
 - a. foliation
 - b. the creation of magma
 - c. extremely high temperatures
 - d. crystallization
9. The Sun is directly or indirectly responsible for:
 - a. solar, wind, geothermal, and biomass
 - b. solar, wind, geothermal, biomass and fossil fuels
 - c. solar, wind, biomass and fossil fuels
 - d. solar, geothermal, and fossil fuels
10. In the rock cycle
 - a. an igneous rock or a metamorphic rock can become a sedimentary rock.
 - b. a sedimentary rock can become an igneous or a metamorphic rock.
 - c. a sedimentary rock can become a different sedimentary rock.
 - d. any rock can become any other type of rock.
11. A roller coaster car at the top of a hill, right before it plunges downward has
 - a. potential energy
 - b. kinetic energy
 - c. momentum
 - d. electrical energy
12. What type of energy is derived from heated groundwater?
 - a. solar energy
 - b. geothermal energy
 - c. hydroelectric energy
 - d. nuclear energy
13. Compared to non-renewable energy sources, renewable energy sources typically are
 - a. less polluting
 - b. cheaper
 - c. better developed
 - d. more transportable
14. Useful solar power comes from
 - a. panels on a building's roof
 - b. plants with large numbers of mirrors and a receiver
 - c. metal boxes that can be used as ovens
 - d. all of these
15. The least expensive and most practical way to meet our energy needs into the future is to
 - a. drill for oil wherever it is found
 - b. develop renewable energy sources
 - c. develop nuclear fusion
 - d. conserve energy whenever possible

True or False

Write true if the statement is true or false if the statement is false.

_____ 16. If water has too many dissolved minerals, they precipitate.

_____ 17. An atom's nucleus has a positive electrical charge.

- _____ 18. A mineral is a naturally-occurring, inorganic substance, that has a specific chemical composition, and a crystalline structure.
- _____ 19. The United States produces as much energy as it consumes.
- _____ 20. The more a metamorphic rock resembles its parent rock, the more metamorphism it has likely undergone.
- _____ 21. A substance that is not made by living things and does not contain carbon is inorganic.
- _____ 22. A mineral deposit that can be mined for profit is an ore.
- _____ 23. Metamorphism occurs because of crystallization and pressure.
- _____ 24. Silicate minerals form in different shapes due to the different ways the silica pyramids join.
- _____ 25. One way to make a sedimentary rock is by compaction, when sediments are squeezed by the weight of overlying sediments.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

26. _____ are valuable minerals found in stream gravels.
27. Halide minerals are _____ that form when water evaporates.
28. A _____ sedimentary rock can contain sediments, organic materials and chemical precipitates.
29. The substance that physical objects are made of is called _____ .
30. Energy moves from higher to lower temperatures through material by _____.
31. The density of a mineral describes how much _____ is in a 3-dimensional space.
32. The largest mineral group is the _____.
33. Mohs scale ranks the _____ of 10 minerals.
34. Multiple elements are bonded together in a(n) _____.
35. _____ metamorphism takes place in rock that is exposed to the heat of a nearby magma.

Short Answer

Answer each question in the space provided.

36. How would you test the hardness of an unknown mineral?

37. What is the process of land reclamation?

38. How do igneous intrusive rocks form? How could you tell an igneous intrusive rock from an igneous extrusive rock?

39. What are non-renewable resources? What happens to them over time?

40. What would be a good renewable energy source in your part of the country and why?

27.3 Unit 3: Processes Inside Earth Test

Unit 3 chapters: *Plate Tectonics, Earthquakes and Volcanoes*

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. Asthenosphere is
 - a. the crust and mantle
 - b. rigid, where earthquakes take place
 - c. below the crust
 - d. a solid that can flow
2. At a divergent plate boundary in the ocean,
 - a. sediments are extremely thick
 - b. new seafloor is created
 - c. old seafloor is destroyed
 - d. crust is neither created nor destroyed
3. Which is not true of Earth's lithosphere?
 - a. it is brittle
 - b. it is broken into plates
 - c. it can flow
 - d. it can have both oceanic and continental crust
4. When an oceanic plate converges with a continental plate, the
 - a. oceanic plate subducts under the continental plate
 - b. oceanic plate slides over the continental plate
 - c. two plates smash upward
 - d. two plates slide past each other
5. The theory of plate tectonics is
 - a. the idea that plates of lithosphere move around Earth's surface - continental drift
 - b. not well understood
 - c. the idea that new seafloor is created and old seafloor is destroyed - seafloor spreading
 - d. the idea that seafloor spreading moves continental plates
6. With increasing distance from the epicenter, the difference in P and the S wave arrival times _____.
 - a. increases
 - b. decreases
 - c. stays constant
 - d. none of the above
7. Which of the following may come before a destructive earthquake?
 - a. an increase in the frequency of smaller earthquakes
 - b. rapid tilting of the ground
 - c. rapid changes in water levels in wells
 - d. all of these

8. When stresses build up in a rock, the rock will
 - a. break
 - b. fold
 - c. remain unchanged
 - d. any or all of these
9. The Richter magnitude scale measures the
 - a. total energy released by an earthquake
 - b. largest jolt of an earthquake
 - c. the damage an earthquake did
 - d. all of these
10. Deadly ocean waves that come from an earthquake are called
 - a. tidal waves
 - b. sea waves
 - c. tsunami
 - d. rogue waves
11. Volcanic activity is common
 - a. at divergent plate boundaries
 - b. at convergent plate boundaries
 - c. at hotspots
 - d. all of these
12. An explosive eruption is caused
 - a. when lava flows into the ocean
 - b. by a buildup of gases
 - c. when crust pulls apart
 - d. none of these
13. A large volcano with shallow slopes made from lots of fluid flows of mafic lava is a(n)
 - a. shield volcano
 - b. supervolcano
 - c. composite volcano
 - d. cinder cone
14. A volcano's slope may change shape before an eruption because
 - a. gases and magma move up into a magma chamber
 - b. earthquakes move ground around
 - c. gases expand as they change in composition
 - d. none of these
15. Above a hotspot, you may find
 - a. chains of composite volcanoes
 - b. volcanoes that increase in age with distance
 - c. evidence of catastrophic eruptions
 - d. nothing but normal continental crust

True or False

Write true if the statement is true or false if the statement is false.

_____ 16. Continental crust is thicker than oceanic crust.

_____ 17. Sediment is thickest along the mid-ocean ridges.

- _____ 18. The mantle is heated by the core, which results in convection.
- _____ 19. Heat flow by the rapid collisions of atoms from a warmer to a cooler place is called convection.
- _____ 20. Alfred Wegener proposed that the continents were once united into a single supercontinent called Pangaea.
- _____ 21. A reverse fault in which the fault plane angle is nearly horizontal is a strike-slip fault.
- _____ 22. An anticline forms by folding of rock layers caused by compressive forces.
- _____ 23. All major earthquakes occur at plate boundaries.
- _____ 24. The ground type is a major factor in determining how much damage an earthquake will cause.
- _____ 25. Pangaea was Earth's first supercontinent.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

26. When the magnetic polarity reverses, the magnetic _____ pole becomes the magnetic south pole.
27. _____ in the mantle drive plate movements.
28. Oceanic crust is created at features in the oceans called _____.
29. Tectonic plates slide past each other at a(n) _____ plate boundary.
30. Plumes of magma rise to the surface and create volcanoes at _____.
31. The highest magnitude earthquakes are above a _____.
32. Most volcanoes are found around the Pacific Ocean basin because there are so many _____ plate boundaries.
33. A bend that causes rocks to be folded downward is a(n) _____.
34. A _____ volcano is composed of layers of lava and ash.
35. The lithospheric plates can be identified by mapping _____ epicenters.

Short Answer

Answer each question in the space provided.

36. How do fossils provide evidence for continental drift?

37. Describe the three types of plate boundaries. At which are volcanoes and earthquakes found?

38. What determines how deadly an earthquake is?

39. Why are no rocks in the oceans older than 180 million years? Why was this discovery so important?

40. Describe the three types of volcanoes (not supervolcanoes).

27.4 Unit 4: Processes on Earth's Surface Test

Unit 4 chapters: *Weathering and Formation of Soil* and *Erosion and Deposition*

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which is not a type of mass movement?
 - creep
 - avalanches
 - beaches
 - landslides
- Soil that was moved by erosion is a
 - residual soil
 - tropical soil
 - mass wasting soil
 - transported soil
- As sediments exit a steep canyon onto open land, they form a(n) _____.
 - fluvial fan
 - sediment fan
 - alluvial fan
 - fan
- Gases such as carbon dioxide mix with water in the atmosphere to create
 - calcium carbonate
 - acids
 - greenhouse gases
 - ozone
- Soil is
 - easily eroded
 - essential for modern society
 - a renewable resource if carefully managed
 - all of these
- Wind erosion is strongest in which type of region?
 - arid
 - humid
 - ocean
 - tropical
- Farms on hillsides may have soil plowed in curved bands because it
 - prevents fires from spreading
 - exposes more topsoil
 - reduces landslides
 - reduces erosion

8. The characteristics of laterite include
 - a. low fertility
 - b. high organic material
 - c. good for farming
 - d. not easily eroded
9. Plants increase chemical weathering by
 - a. breaking apart rock
 - b. creating calcium carbonates
 - c. exchanging elements
 - d. adding oxygen
10. A small lake on flat land in limestone rock is probably a(n)
 - a. tarn
 - b. kettle
 - c. cirque
 - d. sinkhole
11. Long- term temperature and precipitation determine
 - a. weather
 - b. climate
 - c. soil type
 - d. vegetation
12. Streams erode the outer bend and deposit along the inside curve, so
 - a. meanders migrate laterally over time
 - b. meanders straighten out over time
 - c. they become incised meanders
 - d. they overflow onto the floodplain
13. A column forms when
 - a. a stalactite from the ceiling and a stalagmite from the floor join
 - b. a stalagmite from the ceiling and a stalactite from the floor join
 - c. travertine flows downhill in a column-like structure
 - d. calcite flows downhill in a column-like structure
14. Creep is
 - a. the transport of sediment grains pushed along the surface by wind
 - b. the sliding of soil slowly down a hillside
 - c. both of these
 - d. neither of these
15. Which of the following is NOT a feature of valley glaciers?
 - a. a rounded hollow near the top of a mountain
 - b. a lake in glacial till
 - c. a U-shaped valley
 - d. three cirques forming a horn

True or False

Write true if the statement is true or false if the statement is false.

- _____ 16. Mechanical weathering increases the rate of chemical weathering.
- _____ 17. Flowing water does the work of erosion, but not deposition.

- _____ 18. If you stop water from flooding one area, the water will probably flood a nearby location.
- _____ 19. Wind and streams both cause abrasion.
- _____ 20. Rust is iron plus oxygen.
- _____ 21. The layer of soil containing the most organic material is the C horizon.
- _____ 22. Stalactites are found in glacial till.
- _____ 23. A natural levee does not protect nearby lands from flooding.
- _____ 24. Plate tectonics processes build up landforms, erosional processes destroy landforms.
- _____ 25. All rocks weather at the same rate.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

26. A(n) _____ is movement of a mass of soil or rock.
27. Windblown silt and clay deposited layer on layer over a large area is called _____.
28. A river starts in the _____.
29. A(n) _____ is formed as waves erode undercut cliffs.
30. Wind-blown sand forms features called _____.
31. _____ carries dissolved minerals to lower layers in the soil.
32. Organic material that holds topsoil together is _____.
33. Small bits of minerals, rocks, shells and coral are sediments found on _____.
34. A _____ is a curve in a stream channel.
35. _____ water does the work of both erosion and deposition.

Short Answer

Answer each question in the space provided.

36. Explain how mechanical weathering differs from chemical weathering.

37. Draw and describe a soil profile.

38. How do streams deposit natural levees and why are they important?

39. As glaciers melt back, what depositional features do you expect to see?

40. Briefly describe three types of structures that people build to protect shorelines.

27.5 Unit 5: Earth's Past Test

Unit 5 chapters: *Evidence about Earth's Past* and *Earth's History*

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Fossils give clues about
 - past climate
 - a region's geologic history
 - the age of a rock layer
 - all of these
- Which of the following spans of time is the longest?
 - Cambrian
 - Precambrian
 - Phanerozoic
 - Paleozoic
- Fossils are
 - the remains of ancient life
 - the evidence of the activities of ancient life
 - formed by permineralization, replacement, and compression, among others
 - all of these.
- Using the law of lateral continuity, geologists can
 - link together the geologic history of a region
 - determine the relative ages of rock strata
 - determine the absolute ages of rock strata
 - all of these.
- The ozone layer
 - provides oxygen for animals to breathe
 - is pollution
 - provides protection from ultraviolet radiation
 - all of these
- When plants moved to land
 - animals had a source of food and shelter
 - they needed to evolve a stronger structure
 - they could evolve into more complex forms
 - all of these
- Carbon 14 has a half-life of 5,730 years. In 11,460 years the ratio of parent to daughter isotope will be
 - 75:25
 - 50:50
 - 25:75
 - 12.5:87.5

8. Gases in the early atmosphere came from
 - a. comets, volcanism and photosynthesis
 - b. comets and volcanism
 - c. volcanism, photosynthesis and cellular respiration
 - d. photosynthesis and cellular respiration
9. Fossilization
 - a. is likely to happen to organisms with bones or shells
 - b. is a common occurrence
 - c. is more common for animals from mountains and forests than for those from deserts and oceans
 - d. is likely to happen to soft bodied organism
10. Earth's early atmosphere was
 - a. composed mostly of hydrogen and helium
 - b. very similar to the atmosphere we have now
 - c. lacking in oxygen
 - d. very rich in ozone and carbon dioxide
11. Scientists think the mass extinction that occurred 65 million years ago was the result of
 - a. massive volcanic eruptions
 - b. the impact of a Mars-sized planet
 - c. an asteroid impact
 - d. climate change
12. Life on Earth wouldn't be what it is today without
 - a. free oxygen
 - b. the ozone layer
 - c. a changing environment
 - d. all of these
13. A cell needs
 - a. to replicate itself
 - b. to use nutrients to produce work
 - c. to separate itself from its environment
 - d. all of these
14. The fossil record shows that
 - a. present day life forms evolved from earlier life forms
 - b. life evolves from simple to complex in a straight line
 - c. animals evolved from plants, which evolved from bacteria
 - d. life does not change over time, but may go extinct.
15. Biological evolution is
 - a. the idea that humans evolved from chimps
 - b. the changes in a population that accumulate over time
 - c. the idea that all life was created by a supreme being over a very brief period of time
 - d. the idea that the changes in life forms over time have led to the pinnacle - humans

True or False

Write true if the statement is true or false if the statement is false.

- _____ 16. Land organisms can be buried by mudslides, volcanic ash, or sand to eventually become fossilized.
- _____ 17. Cross-cutting relationships helps geologists to determine the older and younger of two rock units.

- _____ 18. Time is missing in a geologic section when there is an unconformity.
- _____ 19. The largest mass extinction occurred at the end of the Cenozoic, when the dinosaurs died out.
- _____ 20. All isotope pairs can be used to date any geological materials.
- _____ 21. About fifty percent of all living organisms become fossils.
- _____ 22. Changes in populations over time is biological evolution.
- _____ 23. Prokaryotes are different from eukaryotes because they have a nucleus.
- _____ 24. Present day life forms evolved from earlier life forms.
- _____ 25. There is fossil evidence that modern horses evolved from an earlier animal.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

26. Continents sometimes collide and form a(n) _____, like Rodinia.
27. Absolute dating of substances can be determined using _____.
28. A species that dies out complete is _____ .
29. Fossils that lived over a wide area for a brief period are useful as _____ fossils.
30. Continents come together to form a(n) _____.
31. Scientists can tell when an event occurred in the relative age known as _____ .
32. The Earth is approximately _____ years old.
33. The _____ era was the age of the dinosaurs.
34. The first organisms on Earth were simple _____ .
35. A random change in an organism's genes is a(n) _____ .

Short Answer

Answer each question in the space provided.

36. Why was oxygen needed in the atmosphere before complex life could evolve?

37. What is a key bed used for in earth history and how?

38. Explain the difference between absolute age and relative age.

39. If the environment changes, what will happen to a species?

40. What are adaptations? How do adaptations develop?

27.6 Unit 6: Earth's Water Test

Unit 6 chapters: *Earth's Fresh Water* and *Earth's Oceans*

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- The difference between a pond and a lake is
 - salt content; lakes are saltier than ponds
 - lakes form from ice age glacial activity; ponds from volcanic eruptions and faulting
 - ponds are smaller and they usually have no outlet
 - none of these
- What type of rock layer makes a good aquifer?
 - impermeable
 - permeable and porous
 - impermeable and porous
 - porous
- Water basins are separated by a
 - separation
 - divide
 - barrier
 - levee
- Salt water from the sea mixes with fresh water from a river in a(n)
 - marsh
 - estuary
 - swamp
 - wetland
- The deepest trench in the ocean is the _____ in the _____ Ocean.
 - Indonesian; Indian
 - Marianas; Pacific
 - Marianas; Indian
 - Indonesian; Pacific
- After sea ice formation, the remaining water may
 - sink because it is more dense
 - sink because it is warmer than the ice
 - float because it is warmer than the ice
 - float because it is less dense
- Due to Coriolis effect, water moves _____ in the northern hemisphere and _____ in the southern hemisphere.
 - clockwise; counterclockwise
 - clockwise; clockwise
 - counterclockwise; clockwise

- d. counterclockwise; counterclockwise
8. Wetlands
- are not very valuable and so are often filled in
 - remove pollutants from water
 - are low in biodiversity
 - none of these
9. Ocean currents bring
- surface water to the deep sea; deep water to the surface.
 - cool polar water to the equator; warm equatorial water to the polar regions
 - nutrients from the deep sea to the surface
 - all of these
10. A lot of the world's food energy is made by
- phytoplankton
 - zooplankton
 - chemosynthetic bacteria
 - seaweed
11. The seafloor
- has features that are very much like the land surface
 - is completely flat
 - has mountains and trenches and flat areas
 - is too dark to understand
12. What percentage of the Earth's water is fresh water?
- 1%
 - 2%
 - 3%
 - 4%
13. What drives deep ocean circulation?
- downwelling
 - upwelling
 - wind
 - Coriolis effect
14. Tide pool organisms must be protected from
- the mix of fresh and salt water
 - drying out
 - intense predation
 - all of these
15. Chemosynthetic bacteria
- provide food to other organisms
 - receive shelter from other organisms
 - live at deep sea vents
 - all of these

True or False

Write true if the statement is true or false if the statement is false.

_____ 16. Water is stored in soil.

- _____ 17. A tributary is the larger of two streams that join together.
- _____ 18. Flooding is a natural part of a river's behavior.
- _____ 19. With transpiration, trees take up water from the soil and release it into the air through their leaves.
- _____ 20. Streams come together at a confluence.
- _____ 21. Seaweeds are found in the littoral (intertidal) zone.
- _____ 22. Whales and dolphins are nekton.
- _____ 23. When rainfall is high, the water table may rise.
- _____ 24. Recharge into the Ogallala Aquifer is about equal to the draw down from pumping.
- _____ 25. The photic zone makes up the majority of the ocean.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

26. _____ occurs when water moves from the surface to deeper regions of soil.
27. Water vapor in the atmosphere becomes water droplets in a cloud by _____.
28. H₂O in gaseous form is _____.
29. The flat area of the seafloor is known as the _____.
30. _____ are animals that float at or near the surface their whole lives.
31. The height of a(n) _____ increases as it nears the shore.
32. If a lot of water is pumped from an aquifer the water table will _____.
33. _____ are the daily rise and fall of sea level at any given place.
34. _____ currents bring nutrients to the surface from deep.
35. _____ tides occur when the Earth, Moon, and Sun form a 90° angle.

Short Answer

Answer each question in the space provided.

36. Draw a diagram of the water cycle and label the reservoirs and processes that connect them. What phase is water in in each of the reservoirs?

37. Describe the causes of floods and their effects.

38. Describe how wells access water. What can happen if a lot of wells are pumping from the same aquifer?

39. Describe the composition of ocean water.

40. Describe what causes tides. What are spring tides and neap tides?

27.7 Unit 7: Weather and Climate Test

Unit 7 chapters: *Earth's Atmosphere, Weather and Climate*

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Which of the following decreases with an increase in altitude?
 - air pressure
 - visibility
 - water vapor
 - none of the above
- You are in a moist forest, thick with tall coniferous trees. Which biome are you probably in?
 - subpolar
 - humid continental
 - marine west coast
 - humid subtropical
- Which appear thin and wispy?
 - Stratus
 - Nimbostratus
 - Altostratus
 - Cirrus
- The sun is at its furthest north at
 - autumnal equinox
 - vernal equinox
 - winter solstice
 - summer solstice
- In which layer of the atmosphere does all weather take place?
 - Troposphere
 - Stratosphere
 - Mesosphere
 - Thermosphere
- Which of the following is a measure of how fast atoms in a material are moving?
 - pressure
 - albedo
 - temperature
 - radiation
- Thunderstorms form when
 - the ground is warm and updrafts form
 - ground temperature is higher than 28-degrees Centigrade
 - a high pressure cell is over the area
 - lightning releases heat energy so the storm grows

8. Which of the following adds oxygen to the atmosphere?
 - a. forest fires
 - b. photosynthesis
 - c. weathering of rocks
 - d. life processes of animals
9. What features does an air mass have nearly identical throughout?
 - a. fog and humidity
 - b. pressure and temperature
 - c. pressure and humidity
 - d. temperature and humidity
10. Which weather phenomena is the most deadly per year?
 - a. hurricane
 - b. heat wave
 - c. tornado
 - d. blizzard
11. If the readings on your barometer fall,
 - a. a change in weather is coming
 - b. storm clouds are probably on the way
 - c. clear skies are probably coming
 - d. you don't know anything about the future; barometers can't be used to predict weather
12. A squall line is
 - a. the line where cold air transitions to warm air at a warm front.
 - b. the location where a cold front catches up to a warm front, resulting in cold, warm and then cold.
 - c. the location where a front stops and remains stationary.
 - d. a line of thunderstorms along a cold front.
13. Outside one morning the plants are coated with water but it didn't rain. The wetness is because
 - a. a fog came in overnight.
 - b. an inversion caused water to condense on the plants.
 - c. the air near the plants cooled to below its dew point.
 - d. this couldn't happen. It must have rained.
14. El Niño events
 - a. occur when ocean temperatures get high.
 - b. cause the trade winds to reverse direction or stop.
 - c. stop upwelling off of western South America.
 - d. all of these
15. Carbon dioxide levels in the atmosphere
 - a. have been rising at least since 1958
 - b. rose in the 1950s and 1960s, but are now stable
 - c. have been declining since around 1972
 - d. none of these

True or False

Write true if the statement is true or false if the statement is false.

- _____ 16. The sun is the source of heat for the troposphere.
- _____ 17. Many characteristics of a storm can be mapped using radar.

- _____ 18. Pilots prefer to fly in the stratosphere because of the lack of turbulence.
- _____ 19. As temperature decreases, relative humidity decreases.
- _____ 20. The thermosphere contains the ozone layer.
- _____ 21. Water has a high specific heat.
- _____ 22. Ozone is the only atmospheric gas that filters out some wavelengths of solar radiation.
- _____ 23. UVC causes sunburns and is dangerous to plants when it reaches the Earth's surface.
- _____ 24. Each layer of the atmosphere is different because it has a different temperature gradient.
- _____ 25. A continental climate has a greater difference in temperature between day and night than a maritime climate.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

26. The low pressure zone near the equator where Hadley Cells meet is the _____.
27. In _____ tropical rainforest is cleared and burned and then farmed until the soil is no longer fertile.
28. Winds blow from _____ pressure zones to _____ pressure zones.
29. A(n) _____ is an uphill airflow.
30. The planet is divided into _____ major climate groups.
31. Lines of equal pressure are called _____.
32. Relatively warm air on the cold ground may lead to _____.
33. In a(n) _____ the air mass does not move.
34. _____ describes what the atmosphere is like at a specific time and place.
35. _____ is the measure of how well a surface reflects light.

Short Answer

Answer each question in the space provided.

36. What is the effect of there being more solar radiation striking at the equator than toward the poles?

37. Describe the greenhouse effect. Why is greenhouse effect so important to life on Earth?

38. How and under what conditions does a hurricane form?

39. What happens when air masses meet?

40. Climate has changed throughout Earth history. Why is climate change dangerous now?

27.8 Unit 8: The Environment and Human Actions Test

Unit 8 chapters: *Ecosystems and Human Populations, Human Actions and the Land, Human Actions and Earth's Resources, Human Actions and Earth's Water and Human Actions and the Atmosphere*

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

- Nutrients are returned to the ecosystem by
 - decomposers
 - scavengers
 - grazers
 - prey
- Which of the following had the single greatest impact on allowing humans to increase their carrying capacity?
 - raising livestock
 - building shelter
 - making tools
 - farming
- Carbon dioxide is found in
 - forests, oceans, the atmosphere
 - volcanic eruptions
 - fossil fuels being burned
 - all of these
- Toxic chemicals, flammable compounds, and substances that cause dangerous chemical reactions are all
 - cancer causing
 - hazardous wastes
 - illegal in the United States
 - all of these
- To conserve resources, we should all
 - reduce consumption
 - reuse products when we can
 - recycle materials
 - all of these
- A food web represents
 - the flow of energy through an ecosystem
 - a longer than average food chain
 - a system for obtaining food
 - the flow of matter into a food chain
- The net-energy ratio of solar energy is 5.8 and of petroleum is 4.9. This means that
 - solar energy is cheaper to use than petroleum
 - more usable energy is obtained per unit of solar than of petroleum
 - the overall energy loss is greater for solar than for petroleum

- d. all of these
8. Which of the following can increase the conservation of water?
- Convert to more efficient methods of irrigation
 - Reduce household demand
 - water lawns less
 - all of the above
9. The best way to be sure energy resources will continue to be available is to
- develop new sources of fossil fuels
 - develop new alternative energy sources
 - conserve energy
 - develop nuclear fusion
10. Clean, safe water is
- available to about one-fifth of all the world's people
 - going to become available to more people in the coming decades
 - available to nearly all of the world's people
 - none of these
11. The ozone hole is caused by
- photochemically produced ozone
 - ozone-destroying chemicals in the stratosphere
 - CFCs on polar stratospheric clouds near the north pole
 - none of these
12. World Health Organization estimates how many people per year die from complications caused by air pollution?
- 2 million
 - 12 million
 - 22 million
 - 200 million
13. Most ocean pollution comes from
- oil spills
 - ships at sea
 - acid rain
 - land
14. Which soil layer is the most likely to erode?
- topsoil
 - A Horizon
 - B Horizon
 - bedrock
15. A cap-and-trade system provides a monetary incentive
- to individuals to conserve energy
 - to nations to develop conservation strategies and technologies
 - to regions to reduce carbon dioxide emissions by promoting conservation
 - none of these

True or False

Write true if the statement is true or false if the statement is false.

38. For alternative energy sources like solar, wind and biofuels to replace fossil fuels, what would need to happen?

39. What has happened to water use in the past 100 years in developed and developing nations? What is predicted to happen to water use in the next 50?

40. How can people reduce air pollution?

27.9 Unit 9: Astronomy Test

Unit 9 chapter: *Observing and Exploring Space; Earth, Moon, and Sun; The Solar System, and Stars, Galaxies, and the Universe*

Name _____ Class _____ Date _____

Multiple Choice

Circle the letter of the correct choice.

1. What is the shape of Earth's path around the Sun?
 - a. square
 - b. circle
 - c. sphere
 - d. ellipse
2. Which layer of the Sun sticks out past the Moon in an eclipse?
 - a. core
 - b. chromosphere
 - c. photosphere
 - d. corona
3. What happens when a new moon passes directly between Earth and the Sun?
 - a. a solar eclipse
 - b. neap tides
 - c. a lunar eclipse
 - d. none of these
4. Who was the first man to set foot on the moon?
 - a. James Lovell
 - b. Buzz Aldrin
 - c. Neil Armstrong
 - d. Edward Hubble
5. The Sun is made of
 - a. hydrogen and helium gas
 - b. hydrogen and a little helium in the form of plasma
 - c. helium gas and some rock and metal in the core
 - d. burning metal and gas
6. Why is a day on Mercury equal to 58 Earth days?
 - a. Mercury revolves very slowly around the Sun
 - b. Venus has a gravitational pull on Mercury
 - c. Mercury rotates very slowly on its axis
 - d. On Mercury, the time for one revolution is the same as for one rotation
7. Which planetary body has light-colored highlands surrounded by dark basalt lavas?
 - a. Mercury
 - b. Moon
 - c. Venus

- d. Mars
8. The nebular hypothesis states that the solar system formed
- from the collapse of a giant cloud of gas and dust
 - in a supernova explosion
 - in the first few minutes after the Big Bang
 - none of these
9. Who first observed that an object can orbit something besides Earth?
- Copernicus
 - Galileo
 - Ptolemy
 - Einstein
10. To learn about the interiors of planets, scientists study
- volcanic rocks
 - the surface of the Moon
 - meteorites
 - the solar wind
11. Spherical groups of old stars tightly held together by gravity are
- nebulae
 - galaxies
 - open clusters
 - globular clusters
12. Evidence for the Big Bang includes that the universe is expanding and there is
- a small amount of energy remaining
 - a small amount of reverberating sound remaining
 - blueshift of the farthest out galaxies
 - none of these
13. Why can't a planet be part of the asteroid belt?
- Planets have different orbit from asteroids.
 - Planets are made of different materials.
 - Planets clear their space of debris.
 - Planets are too large to be in the asteroid belt.
14. You can tell the brightest star Sirius from a bright planet because
- they are different colors
 - the planet moves backwards sometimes
 - Sirius is an obvious binary star
 - Sirius appears much larger than any planet
15. Where do shorter period comets come from?
- the Kuiper belt
 - other solar systems
 - the Moon
 - the asteroid belt

True or False

Write true if the statement is true or false if the statement is false.

_____ 16. The seasons are due to Earth's elliptical orbit around the Sun.

- _____ 17. Iron in Earth's crust creates the magnetic field.
- _____ 18. The Moon is Earth's only natural satellite.
- _____ 19. Galileo invented the first telescope.
- _____ 20. All of the spacecraft we have sent out for exploration are within our solar system.
- _____ 21. When you observe an object in space you are seeing what it looked like in the past.
- _____ 22. Radio telescopes are best used to study objects within our solar system.
- _____ 23. Space-based telescopes provide clearer views of the planets and other stars.
- _____ 24. The Universe began about 13.7 billion years ago.
- _____ 25. You would weigh one-sixth of your current weight on the Moon.

Fill in the Blanks

Fill in the blank with the term that best completes the sentence.

26. The _____ is an enormous, oval-shaped storm on Jupiter.
27. Most of the solar system's mass is in _____.
28. When Moon and Sun are on opposite sides of Earth the tides are _____.
29. The Moon has no weather because it has no _____.
30. During a solar eclipse, Earth falls into the _____ of the moon.
31. At the center of many galaxies is a(n) _____.
32. Sunspots occur in _____ year cycles.
33. Moving a rocket through space requires _____.
34. The light spectra of nearly all galaxies have a shift toward _____ wavelengths.
35. The _____ theory describes the origin of the universe.

Short Answer

Answer each question in the space provided.

36. List the inner planets and describe their common characteristics.

37. What the Ancient Greeks think did Galileo observe with his telescope that changed the way people thought about the solar system? What was the new solar system model?

38. Explain the difference between asteroids, meteoroids, and comets.

39. Why is Pluto now considered a dwarf planet?

40. What started the space race? How did the United States react?