



DEPARTMENT OF
EDUCATION

UPPER SECONDARY
SCHOOL CERTIFICATE
EXAMINATIONS

GEOGRAPHY

THURSDAY

18 October 2012

Time allowed:

2 hours 30 minutes

(8:00am – 10:30 am)

NO EXTRA TIME

(NO OTHER TIME)

Candidates are advised to
fully utilise the allocated time



INSTRUCTIONS TO CANDIDATES:

(To be read out by the external invigilator)

1. The subject code for **Geography** is **13**
2. There are **16 printed** pages in the question booklet.
3. An Electronic Answer Sheet for Section A and **8 printed** pages in the answer booklet for Section B are inserted in the centre of the question booklet.

You will be given an extract of the Papua New Guinea **Topographic survey map KARKAR 1:100 000** for use in this examination.

4. There are **two** sections in this paper. Answer all questions.

Section A: Multiple Choice (Questions 1- 30) 30 Marks

This section will be electronically marked.

All answers to the Multiple Choice Section **MUST** be answered on the Electronic Answer Sheet.

Carefully following the instructions, fill in your Candidate Information and Subject Information.

Choose A, B, C, or D from the alternatives given and use a HB pencil to shade in the correct letter to each question on the Electronic Answer Sheet.

If you make a mistake, rub the shading out completely with an eraser and shade in your correct alternative clearly.

Section B: Short Answers (Questions 31- 40) 70 Marks

Write down your name, your school and complete your 10 digit candidate number on the Answer Booklet provided for Section B.

5. You are required to write only the correct answers in the space provided on the Answer Booklet.
6. Answers written on the question paper including the rough work paper will **not** be marked. Write answers neatly in spaces allocated on the answer sheet. Answer ***ALL*** questions.
7. Correction Fluid is ***not allowed*** on the answer sheet. Where you have made an error, cross out the wrong answer and start on a new line.

The Penalty for Cheating or Assisting Others to Cheat in National Examinations is Non-Certification.

DO NOT TURN OVER THE PAGE

AND DO NOT WRITE UNTIL YOU ARE TOLD TO START.

QUESTION 7

What are the two major cash crops cultivated on Karkar Island?

- A. Coffee and Tea B. Oil palm and Cocoa
C. Coconut and Cocoa D. Coconut and Oil palm

QUESTION 8

At Palas Point (GR 5077) a sand spit has been formed. In which direction has the wind blown to help create this feature?

- A. Southeast B. Southwest C. Northeast D. Northwest

QUESTION 9

What direction is Tavultae Point from Mangen (Dove) Point?

- A. Southeast B. Southwest C. Northeast D. Northwest

QUESTION 10

Which 6-figure grid square reference is Tokain Agricultural Station located?

- A. 801945 B. 711992 C. 584699 D. 468802

QUESTION 11

Tides are the result of the

- A. gravitational pull of the Earth. B. wind lashing the sea surface.
C. movement of the oceanic crust. D. gravitational pull of the moon and sun.

QUESTION 12

Which of these is the chief agent of erosion in tropical deserts?

- A. Temperature B. Wind C. Water D. Ice

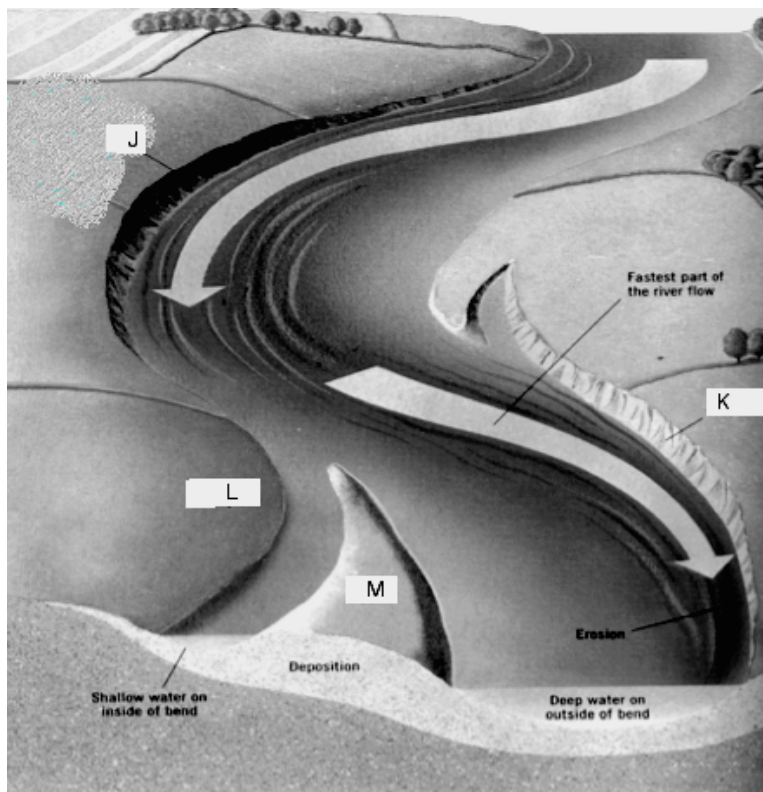
QUESTION 13

The lines drawn on the map through all places that have the same rainfall are called

- A. isohels. B. isotherm. C. isohyets. D. isobar.

For questions 14 and 15, use the diagram below.

RIVER SYSTEM



QUESTION 14

Which two letters represent points of erosion on the river?

- A. J and L B. L and M C. J and K D. M and K

QUESTION 15

Which letter represents the 'point bar'?

- A. J B. K C. L D. M

QUESTION 16

Which of these winds blow from 90°N to 60°N?

- A. Northeast polar B. Southeast polar
 C. Northeast trade D. Southeast trade

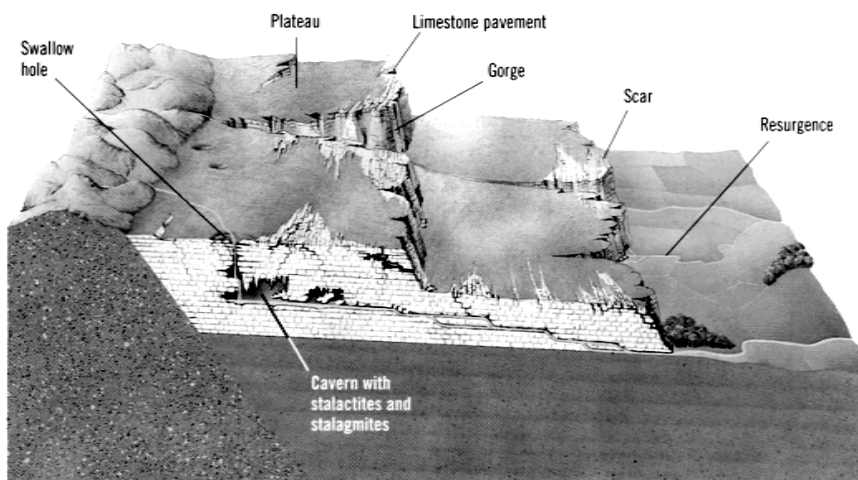
QUESTION 17

An Anemometer is a weather instrument used to measure

- A. wind speed.
- B. wind direction.
- C. air pressure.
- D. relative humidity.

Refer to the diagram below to answer questions 18 and 19.

LIMESTONE LANDFORM



QUESTION 18

Which of these types of weathering is dominant in the area shown above?

- A. Carbonation
- B. Insolation
- C. Oxidation
- D. Freeze-thaw

QUESTION 19

The rocks that form the crust of this area are normally found at sea level. However, in Papua New Guinea, the topography shown in the diagram can be found in the Simbu Province. Which of these is the cause of these rocks being found in Simbu Province?

- A. Volcanic eruption
- B. Continental drift
- C. Folding of the crust
- D. Deposition

QUESTION 20

Which of these modes of transportation would be the most suitable in transporting oil and gas from Hela, Enga and Gulf Provinces to the port of shipment?

- A. Land
- B. Sea
- C. Railway
- D. Pipeline

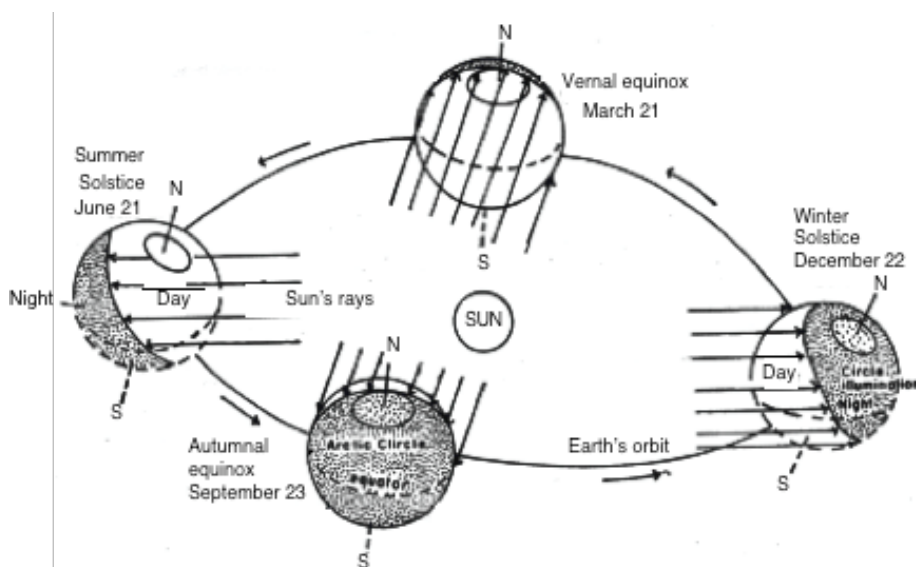
QUESTION 21

Oil is naturally found on the bedding planes of

- A. Sedimentary rocks.
- B. Metamorphic rocks.
- C. Igneous rocks.
- D. Sandstones.

Study the diagram to answer questions 22 and 23

Plane of the ecliptic



QUESTION 22

Which of the statements below is correct?

- A. There are 12 hours of sunlight and 12 hours of night in Japan on March 22nd.
- B. There are more than 12 hours of sunlight and less than 12 hours of night in New Zealand on March 22nd.
- C. There are less than 12 hours of sunlight and more than 12 hours of night in China on September 23rd.
- D. There are less than 12 hours of sunlight and more than 12 hours of night in the Republic of South Africa on September 23rd.

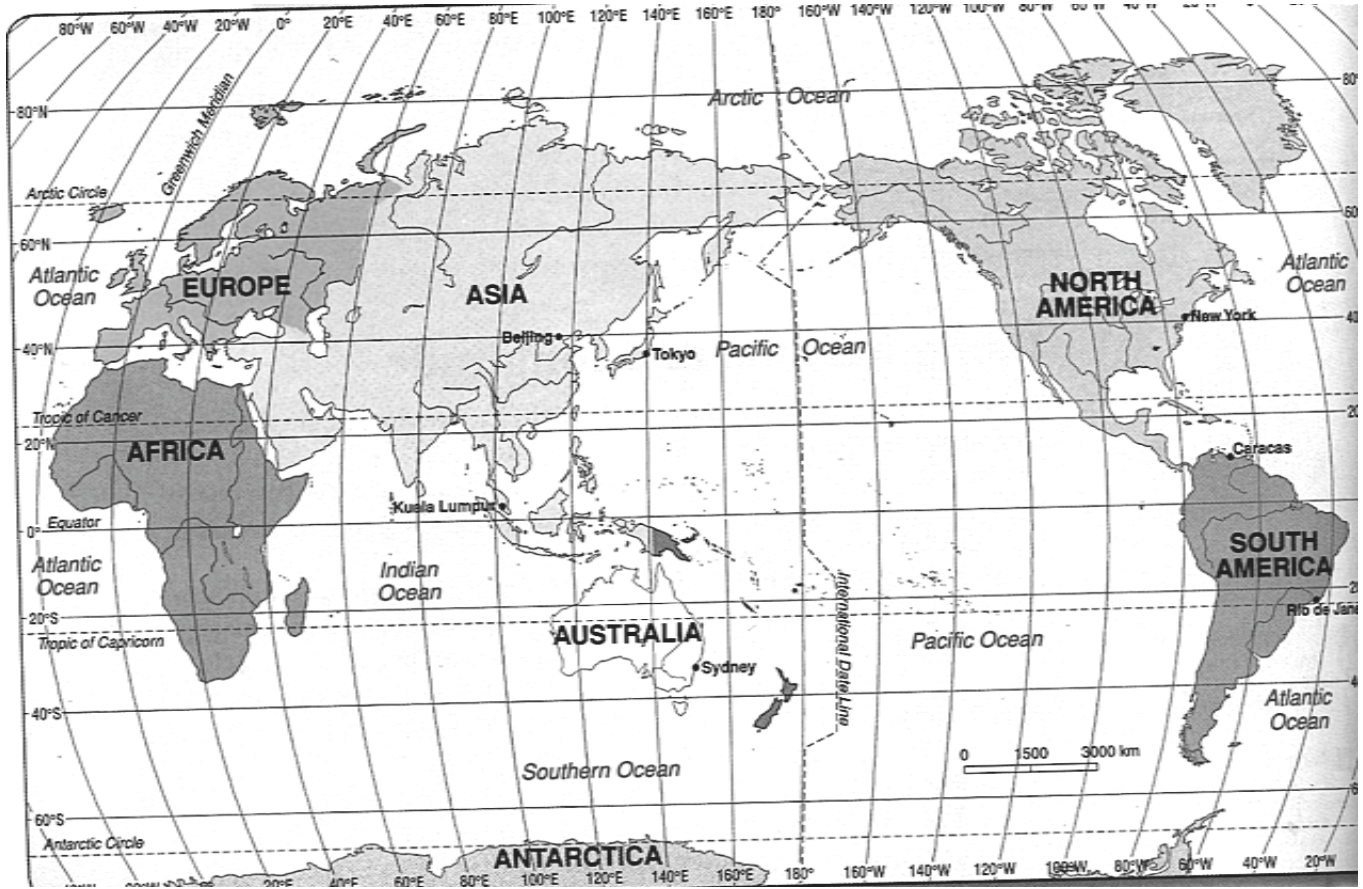
QUESTION 23

According to the diagram which of these statements is correct?

- A. There will be low pressure systems developing over the continents in the Northern Hemisphere in December.
- B. There will be high pressure systems developing over the oceans in the Northern Hemisphere in June.
- C. There will low pressure systems developing over the continents in the Southern Hemisphere in December.
- D. There will be low pressure systems developing over the oceans in the Southern Hemisphere in December.

For questions 24 and 25, refer to the world map below

Latitude and Longitude pinpoint on a map



QUESTION 24

Genevieve Jenkin departed Port Moresby’s Jacksons airport at 6:00am on Tuesday 22nd May 2012. She is on a direct flight bound for Heathrow airport, London England. When will she arrive at Heathrow?

- A. 8:00 am on Monday 21stMay 2012
- B. 8:00 pm on Monday 21stMay 2012
- C. 4:00 am on Wednesday 23rd May 2012
- D. 8:00 pm on Wednesday 23rd May 2012

QUESTION 25

Samantha Israel departed Port Moresby’s Jacksons airport at 6:00 am on Tuesday 22nd May 2012. She is on a direct flight bound for Tokyo. The flight takes a total of 3 hours. When does she arrive in Tokyo?

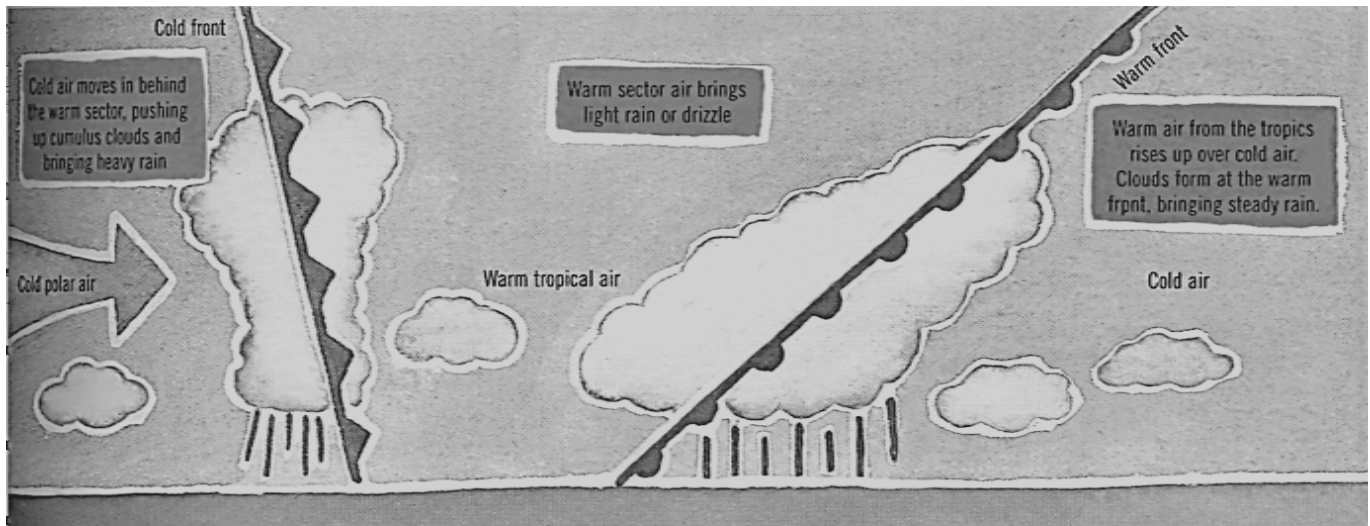
- A. 3:00 am on Tuesday 22nd May 2012
- B. 9:00 am on Tuesday 22nd May 2012
- C. 3:00 am on Wednesday 23rd May 2012
- D. 9:00 pm on Wednesday 23rd May 2012

QUESTION 26

Which of the following factors can have the greatest influence on the temperature of Madang town?

- A. Ocean current
- B. Altitude
- C. Distance from the sea
- D. Aspect

Study the type of rainfall shown below and answer questions 27 and 28



QUESTION 27

What type of rainfall is shown in the diagram above?

- A. Relief
- B. Frontal
- C. Orographic
- D. Convectional

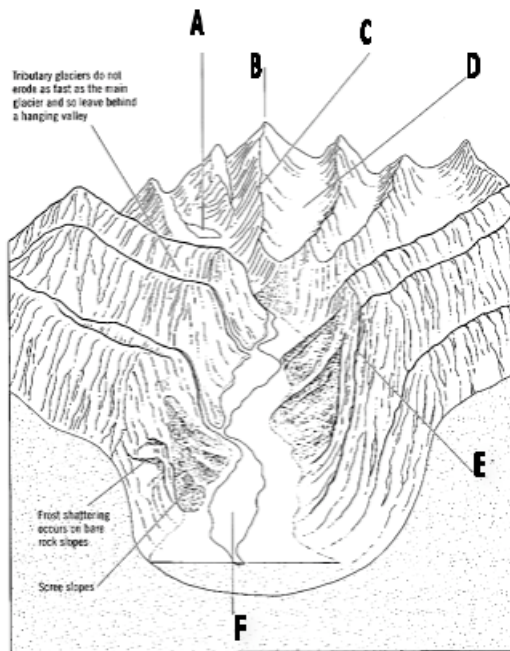
QUESTION 28

Which of these statements is not true about this type of rainfall?

- A. It never occurs in Papua New Guinea.
- B. Occurs due to the presence of a cold air mass and a warm air mass.
- C. Normally occurs in summer.
- D. Normally occurs in winter.

Use the diagram below to answer questions 29 and 30.

GLACIAL LANDFORM



QUESTION 29

What feature is represented by letter B?

- A. Hanging valley B. Pyramid peak C. Cirque D. Scree slope

QUESTION 30

What feature does letter E represent?

- A. Hanging valley B. Pyramid peak C. Cirque D. Scree slope

SECTION B: SHORT ANSWER (Questions 31 to 40)

For questions 31 to 33 use the same topographic map: *KARKAR 1:100 000* to answer the questions.

QUESTION 31

(a) Write down the 4- figure grid square references for

- i) Namu School _____ (1)
- ii) Karim bridge _____ (1)
- iii) Karkar Airfield _____ (1)
- iv) Medibur Aid posit _____ (1)

(b) Write down the 6 - figure grid square references for

- i) Mangar No.1 village _____ (1)
- ii) Trig station (PCP67) _____ (1)
- iii) Yalo village _____ (1)

QUESTION 32

Below are seven grid square references from the map, labelled A, B, C, D, E, F and G; and seven types of social, cultural and economic land uses that can be found on the map.

Grid references:

A	B	C	D	E	F	G
5668	4480	8296	7976	6465	4977	6451

Identify the grid square from this list in which the following land use types can be found, and write the letter, A, B, C, D, E, F or G, next to the name of the land use.

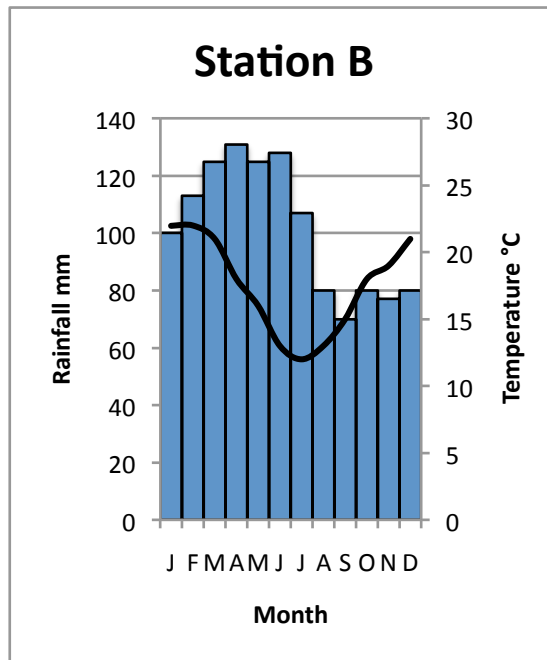
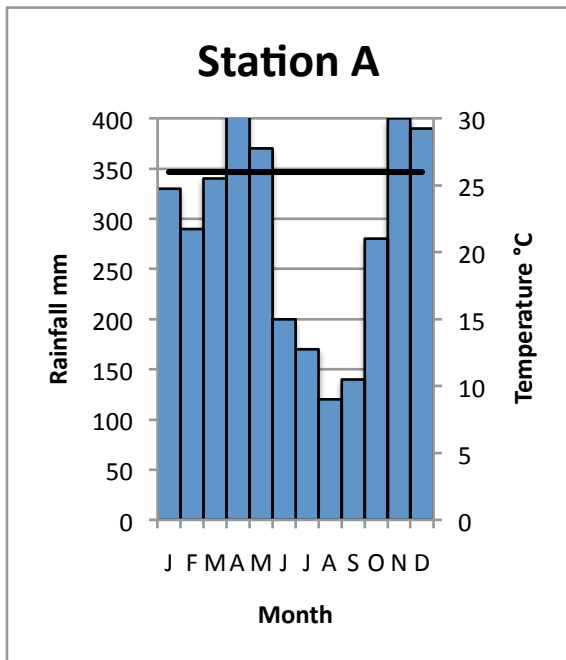
- (i) Numerous small gardens _____ (1)
- (ii) Cultivation _____ (1)
- (iii) Karkar Air field _____ (1)
- (iv) Dogowan Plantation _____ (1)
- (v) Mugii Mission _____ (1)
- (vi) Coconut Plantation _____ (1)
- (vii) Cocoa Plantation _____ (1)

QUESTION 33

- (i) What is the distance, to the nearest kilometres, from the top of Mount Uluman (850871) to Mom village (796894)? (1 mark)
- (ii) What are the altitudes of these two locations?
 - a) Mount Uluman _____
 - b) Mom village _____ (2 marks)
- (iii) What is the change in altitude, to the nearest 100 m, from the top of Mount Uluman to Mom village? (1 mark)
- (iv) Using your answers from (i) and (iii), calculate the approximate average gradient from the top of Mount Uluman to Mom village. (Show your working out) (3 marks)

QUESTION 34

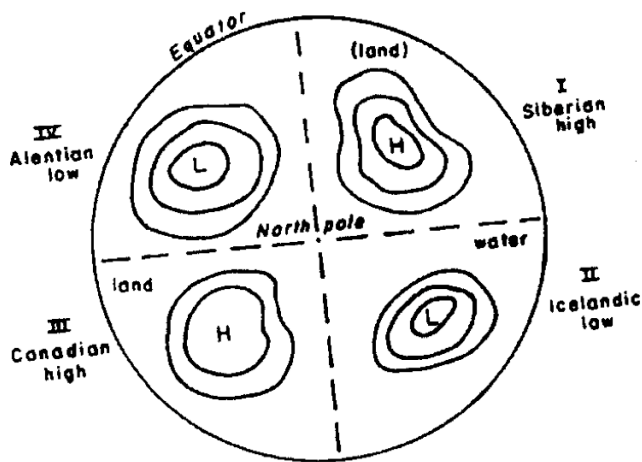
Study the two climatic graphs to answer the following questions



- (i) Which hemisphere is probably Station B located? (1 mark)
- (ii) Give a reason why Station B is located at that hemisphere to support your answer in question (i). (1 mark)
- (iii) Explain why Station A has a very low annual average mean rainfall between the months of July to September? (2 marks)
- (iv) What type of vegetation would be found in Station B? (1 mark)
- (v) Name the climate type for each Station? (2 marks)

QUESTION 35

Study the schematic map of the northern hemisphere in December. It shows intense centres of highland low pressure occupying opposing quadrants.



- (i) What is the season experienced in December? (1 mark)
- (ii) Explain where the Siberian High pressure has developed and explain why. (2 marks)
- (iii) Explain the direction of surface air movement (wind) between the 4 pressure zones. (1 mark)
- (iv) What would the pressure systems be like in June? (1 mark)
- (v) What kind of air pressure is found at the sub-arctic and why. (1 mark)
- (vi) Name a natural phenomena that would be associated with the movement of air masses from the region of high pressure areas to the low pressure areas. (1 mark)

QUESTION 36

Manufacturing industry can be thought of as a system. For a factory to manufacture or produce a product, it requires a certain number of inputs. There a various industrial factors considered besides location before establishing a business.

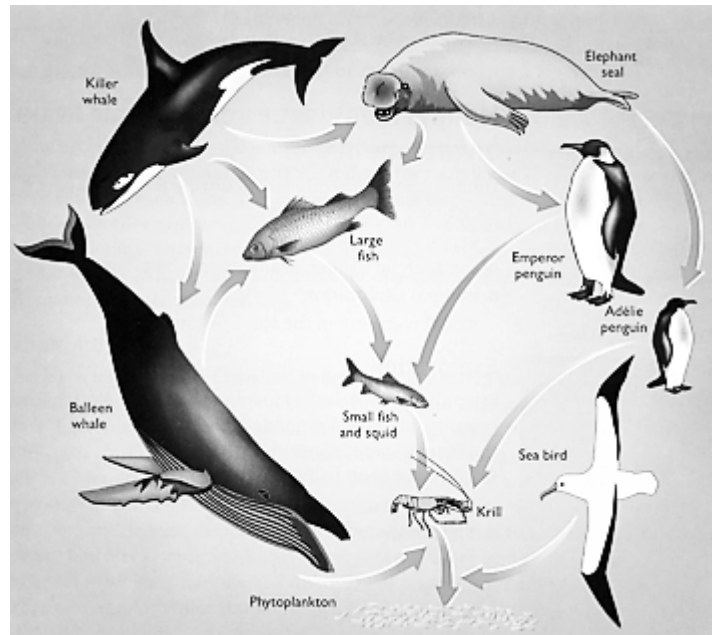
Below are seven business activities, for each activity, state the main industrial factor for its location.

- (a) Napa Napa oil refinery in Port Moresby. (1 mark)
- (b) Coffee factory in Goroka. (1 mark)
- (c) Second hand car dealer in Port Moresby. (1 mark)
- (d) Oil palm Estate in West New Britain. (1 mark)
- (e) Diana tuna tin fish factory in Madang. (1 mark)
- (f) Atlas steel industry in Lae. (1 mark)
- (g) Ramu sugar in Ramu (1 mark)

QUESTION 37

Below is the Antarctic food web. In the Antarctic ecosystem, the ecosystem is balanced and connected. This ecosystem is centred on the presence of phytoplankton and krill. You can see from the food web how different Antarctic marine creatures depend on it as food source.

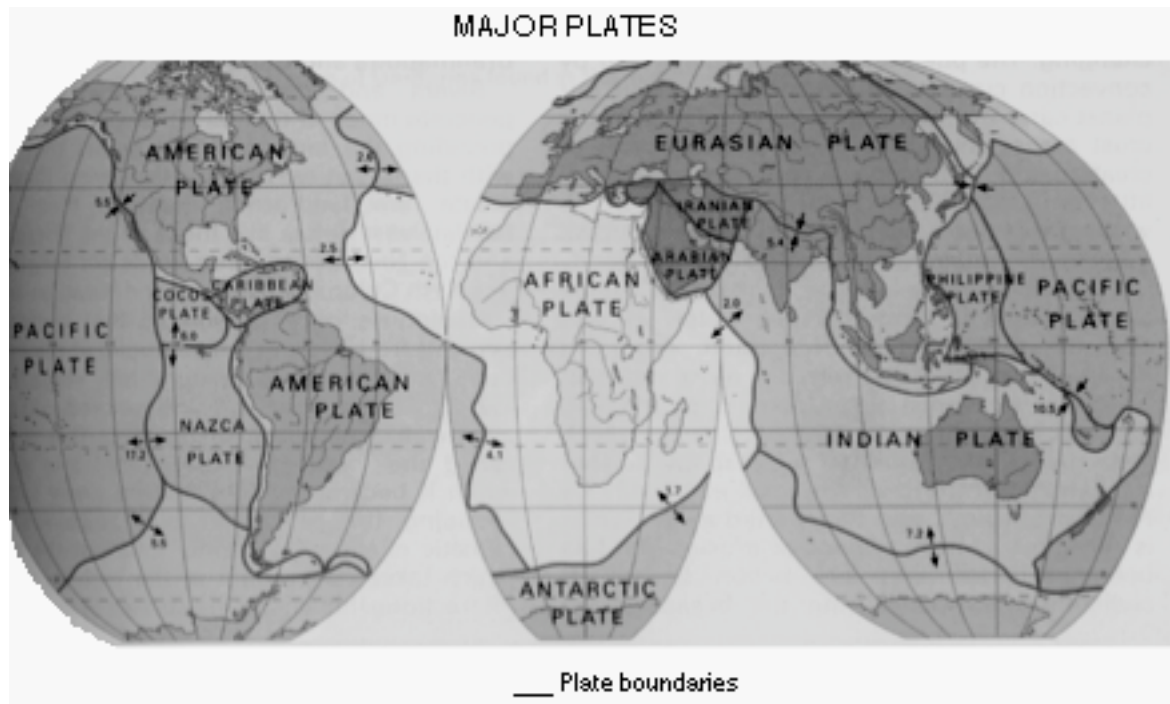
ANTARCTIC FOOD WEB



- (a) Phytoplanktons are primary producers in marine food webs. However, change in temperature is threatening these organisms and their role in marine food webs. Name the current global environmental issue that is threatening phytoplanktons. (1 mark)
- (b) Explain how the environmental issue in question ‘a’ is likely to affect individual animals in the Antarctic food web as well as the entire food web itself. (2 marks)
- (c) Explain how temperature affects animals who are part of the biosphere. (2 marks)
- (d) Discuss two causes for the environmental issue in question ‘a’. (2 marks)

QUESTION 38

Study the map below on plate tectonics and answer the questions.

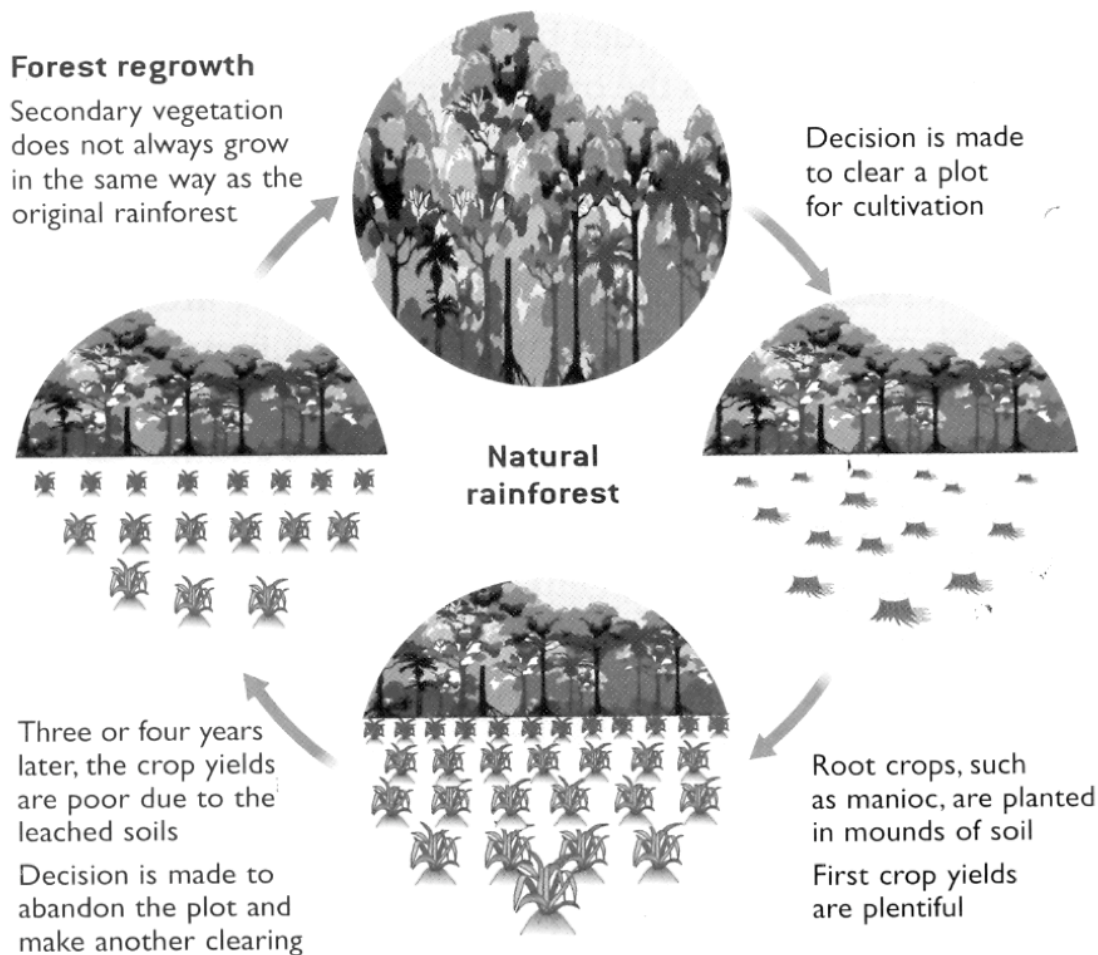


- (a) What kind of landform is formed at the ‘boundaries’ of these plates?
- (i) American Plate and Eurasian Plate (1 mark)
 - (ii) Pacific Plate and Nazca Plate (1 mark)
 - (iii) Describe the type of plate movement taking place between the American and Eurasian Plates. (1 mark)
 - (iv) Describe the type of plate movement taking place between the Pacific and Nazca Plates. (1 mark)
- (b) Name the type of rocks likely to be found at the boundaries of the four plates. (1 mark)
- (c) At which plate boundary are you likely to find volcanoes? (1 mark)
- (d) Explain the underlying cause for plate movements. (1 mark)

QUESTION 39

Study the diagram below on shifting cultivation and answer the questions.

THE CYCLE OF SHIFTING CULTIVATION

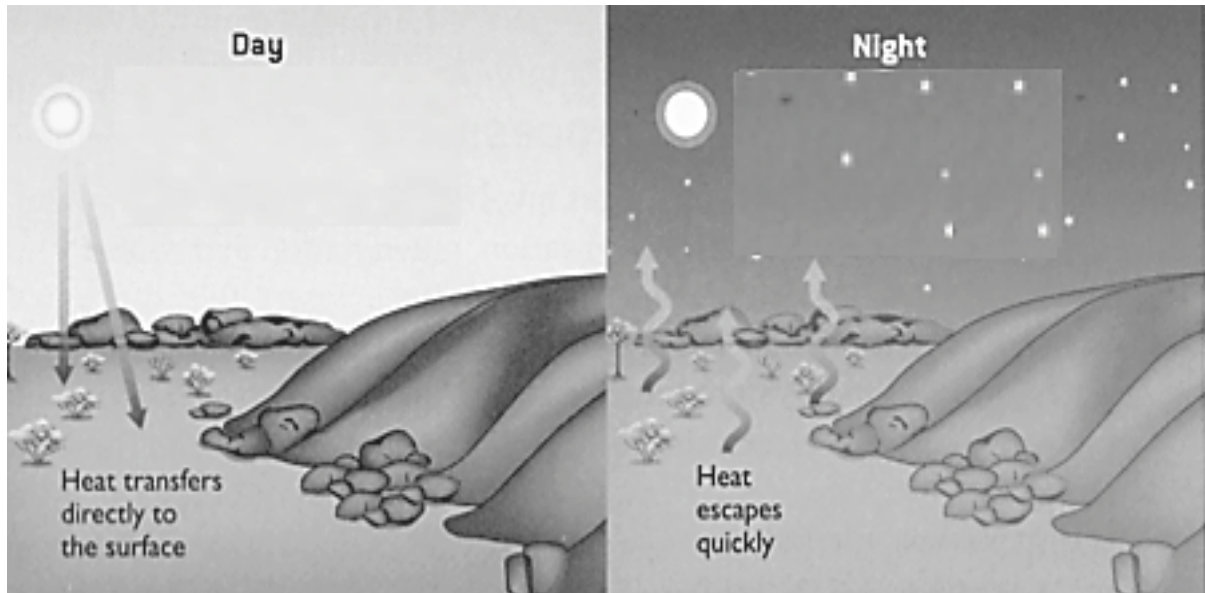


- (i) Is shifting cultivation an **intensive** or an **extensive** agricultural practice? (1 mark)
- (ii) Explain your reason to question (i). (1 mark)
- (iii) After a plot has been cleared (Middle Right Picture), which two natural risks is the cleared area exposed to? (2 marks)
- (iv) Rainforests are cleared rapidly in hectares throughout the equatorial areas for various economical activities. Name one commercial practice found in Papua New Guinea. (1 mark)
- (v) 'Shifting cultivation' can also be known as _____. (1 mark)
- (vi) Explain why rainforest do not recover? (1 mark)

QUESTION 40

Study the illustration below and answer the questions.

The change between day and night temperatures in hot deserts



- i) State two reasons why hot deserts experience a high diurnal temperature range? (2 marks)
- ii) Give two main contributing factors why continental deserts are very dry? (2 marks)
- iii) Which type of weathering is dominant in the desert region? (1 mark)
- iv) Name one depositional and an erosional feature found in the desert landform? (2 marks)

END OF EXAMINATION

GEOGRAPHY PAPER - 2012

SECTION B - ANSWER BOOKLET

Write your name, your province and school codes and your candidate number correctly and clearly in the space provided below.

Year		Province		School			Candidate No		
1	2								

Candidate Name: _____

School Name: _____

ANSWERS WRITTEN ON THE QUESTION PAPER OR ANY OTHER PAPER WILL NOT BE MARKED. WRITE ANSWERS NEATLY IN THE SPACES AS PROVIDED IN THIS ANSWER BOOKLET.

FOR MARKERS USE ONLY

	Score	Markers Initials	
		M1	M2
Question 31			
Question 32			
Question 33			
Question 34			
Question 35			
Question 36			
Question 37			
Question 38			
Question 39			
Question 40			
TOTAL			

SECTION: B SHORT ANSWERS

For questions 31 to 33 use the same topographic map: KARKAR 1:100 000 to answer these questions.

<p>QUESTION 31</p> <p>(a) Write down the 4-figure grid square for</p> <p>i) Namu school _____</p> <p>ii) Karim bridge _____</p> <p>iii) Karkar Airfield _____</p> <p>v) Medibur Aid posit _____</p> <p>(b) Write down the 6-figure grid reference for</p> <p>i) Manga No.1 village _____</p> <p>ii) Trig station (PCP67) _____</p> <p>iii) Yalo village _____</p>	<p>(1)</p> <p>(1)</p> <p>(1)</p> <p>(1)</p> <p>(1)</p> <p>(1)</p> <p>(1)</p> <p>(1)</p>
<p><i>For Markers Use Only</i></p>	<p>Q31 TOTAL</p>

QUESTION 32		
Write the letter next to the name of the land use.		
i) Numerous small gardens _____		(1)
ii) Cultivation _____		(1)
iii) Karkar Airfield _____		(1)
iv) Dogowan Plantation _____		(1)
v) Mugii Mission _____		(1)
vi) Coconut Plantation _____		(1)
vii) Cocoa Plantation _____		(1)
<i>For Markers Use Only</i>	Q32 TOTAL	

QUESTION 33		
i) _____		(1)
ii) (a) Mount Uluman _____		(1)
(b) Mom village _____		(1)
iii) _____		(1)
iv) average gradient: _____ (1 mark)	(show your working out)	(2 marks) (3)
<i>For Markers Use Only</i>	Q33 TOTAL	

QUESTION 34		
(i) Station B _____		(1)
(ii) _____		(1)
(iii) _____		
_____		(2)
(iv) _____		
(v) Station A _____		(1)
Station B _____		(1)
		(1)
<i>For Markers Use Only</i>	Q34 TOTAL	

QUESTION 35		
(i) _____		(1)
(ii) _____		
_____		(2)
(iii) _____		
(iv) _____		(1)
(v) _____		(1)
(vi) _____		(1)
<i>For Markers Use Only</i>	Q35 TOTAL	

QUESTION 36		
(a) Napa Napa oil refinery in Port Moresby.	_____	(1)
(b) Coffee factory in Goroka.	_____	(1)
(c) Second hand car dealer in Port Moresby.	_____	(1)
(d) Oil palm Estate in West New Britain.	_____	(1)
(e) Diana tuna tin fish factory in Madang.	_____	(1)
(f) Atlas steel industry in Lae.	_____	(1)
(g) Ramu sugar in Ramu.	_____	(1)
<i>For Markers Use Only</i>	Q36 TOTAL	

QUESTION 37

(a) _____

(1)

(b) _____

(2)

(c) _____

(2)

(d) i. _____

(1)

ii. _____

(1)

For Markers Use Only

Q37 TOTAL

QUESTION 38

(a)

(i) _____

(1)

(ii) _____

(1)

(iii) _____

(1)

(iv) _____

(1)

(b) _____

(1)

(c) _____

(1)

(d) _____

(1)

For Markers Use Only

Q38 TOTAL

QUESTION 39		
(i) _____		(1)
(ii) _____ _____		(1)
(iii) 1. _____ 2. _____		(2)
(iv) _____		(1)
(v) _____		(1)
(vi) _____		(1)
<i>For Markers Use Only</i>	Q39 TOTAL	

QUESTION 40		
(i) a. _____		(1)
b. _____		(1)
(ii) a. _____ b. _____		(2)
(iii) _____		(1)
(iv) Depositional feature _____		(1)
Erosional feature _____		(1)
<i>For Markers Use Only</i>	Q40 TOTAL	