



**DEPARTMENT OF  
EDUCATION**

**CERTIFICATE OF  
BASIC EDUCATION  
EXAMINATIONS**

**COMBINED  
SUBJECTS**

04<sup>th</sup> November 2010

Time allowed: 3 hours

**Candidates are advised to  
fully utilize the allocated  
time.**

**INSTRUCTIONS TO CANDIDATES:**

*(To be read out by the external invigilator before the start of the examination)*

There are 50 questions in this paper. Attempt ALL questions even if you are not so sure of some of the answers.

The Examination is divided into three parts:

- PART A: 20 x Multiple-Choice questions (20 marks)**  
**PART B: 25 x Short –Answer questions (25 marks)**  
**PART C: 1 x Extended Answer question (5 marks)**

The Answer Sheet is placed in the middle of the Examination Booklet. Take out the Answer Sheet from the Examination Booklet.

Write your candidate number, your name, school name and province name in the space given on the **Answer Sheet**. The invigilator will tell you what to write.

For each question in **PART A** choose the best answer and write its **LETTER** in the space given on the **Answer Sheet**.

For each question in **PART B** work out the answer and write the answer in the space provided on the **Answer Sheet**.

If you find a question very difficult, do not spend too much time thinking about it. Leave the question out and go on with the rest of the paper. If you have time in the end, return to the difficult questions and think about them more carefully.

Write your answers in **BLUE** or **BLACK** ink (pen or biro).

If you decide to change an answer, make your correction as shown below so that it is clearer to the markers what your final answer is. Do **NOT** use correction fluid on your answer sheet.



Hand in **BOTH** the Answer Sheet and the papers used for rough work at the end of the examination.

**Extra time will NOT be allowed to complete the examination under any circumstances.**

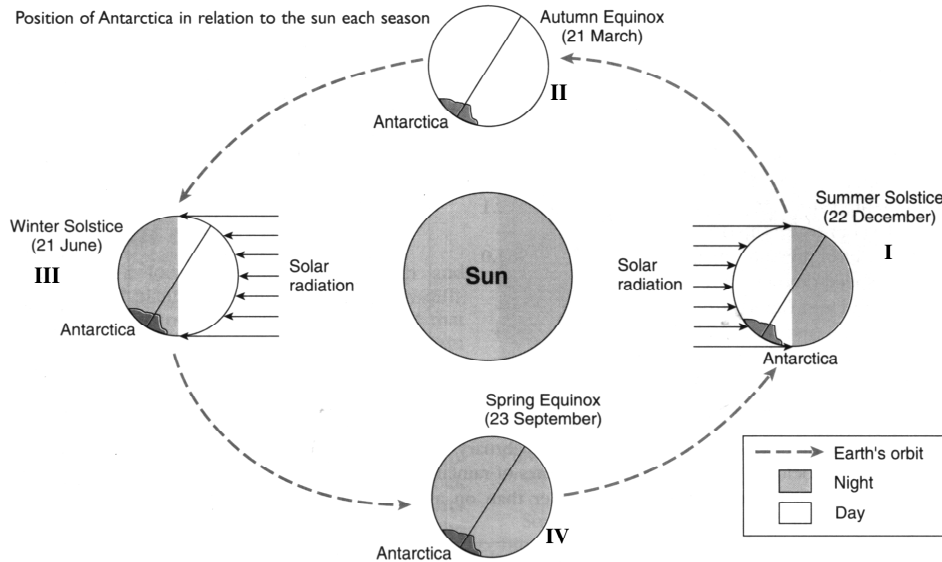
**DO NOT TURN OVER THIS PAGE AND DO NOT WRITE UNTIL  
YOU ARE TOLD TO START.**

**PART A (Questions 1 to 25)**

**Choose the best answer for each question and write the letter of the answer you have chosen in the space provided on the ANSWER SHEET.**

**QUESTION 1**

For the following question, refer to the diagram below.



The Northern Hemisphere experiences winter on the 22<sup>nd</sup> December since it is tilted away from the Sun. When will Southern Hemisphere experience winter?

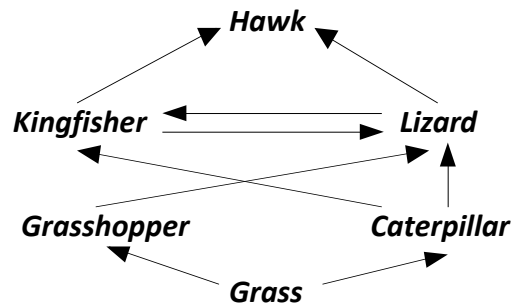
- A. 22<sup>nd</sup> December
- B. 21<sup>st</sup> March
- C. 21<sup>st</sup> June
- D. 23<sup>rd</sup> September

**For Questions 2 to 5, refer to the following food web of a grassland ecosystem.**

**QUESTION 2**

Which of the following is NOT a food chain from the above food web?

- A. grass → grasshopper → lizard → hawk
- B. grass → caterpillar → kingfisher → hawk
- C. grass → spider → kingfisher → hawk
- D. grass → caterpillar → lizard



**QUESTION 3**

How many trophic (energy) levels can be found in this food web?

- A. 1
- B. 2
- C. 3
- D. 4

**QUESTION 4**

In how many food chains is the lizard?

- A. 1
- B. 2
- C. 3
- D. 4

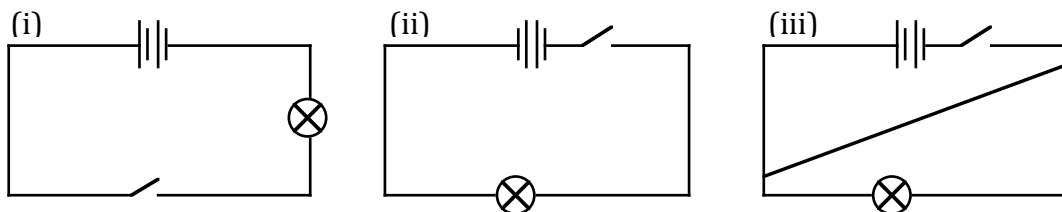
**QUESTION 5**

If herbicide was sprayed to kill the grass for some time, which of the organisms in the food web will have the lowest concentration of the chemical?

- A. grasshopper      B. lizard      C. hawk      D. kingfisher

**QUESTION 6**

Refer to the following electric circuit diagrams shown below.



Which lamps will not light if the switches in all three circuits are closed?

- A. Lamps (i) and (ii)      B. Lamps (ii) and (iii)  
 C. Lamps (i) and (iii)      D. Lamps (i), (ii) and (iii)

**QUESTION 7**

Which instrument is made of both an animal skin and wood?

- A. garamut      B. rattles      C. panpipe      D. kundu

**QUESTION 8**

Which instrument produces sound when struck/hit against itself?

- A. saxophone      B. panpipe      C. garamut      D. flute

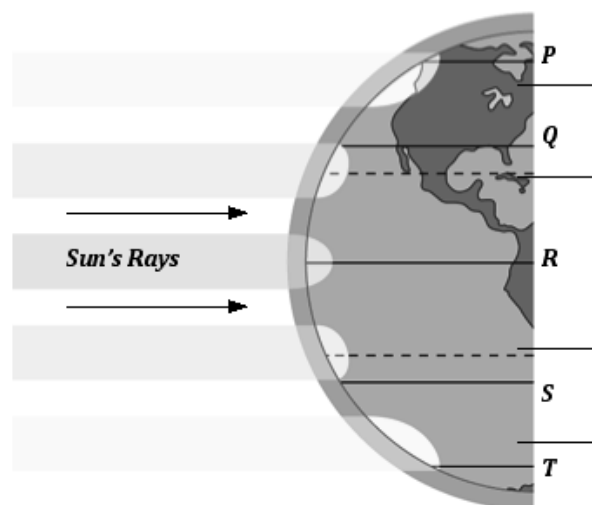
**QUESTION 9**

Refer to the diagram below.

The amount of heat that reaches the Earth's surface varies from place to place. The atmosphere (the belt of air around the Earth) absorbs some of the Sun's heat. Because the Sun's rays have to pass through a greater thickness of atmosphere near the poles, less heat reaches the ground than at the Equator. The Sun's rays are also spread over a larger area and so are less effective near the poles.

What region, P, Q, R, S or T will record the highest temperatures during the day?

- A. P      B. Q  
 C. R      D. S



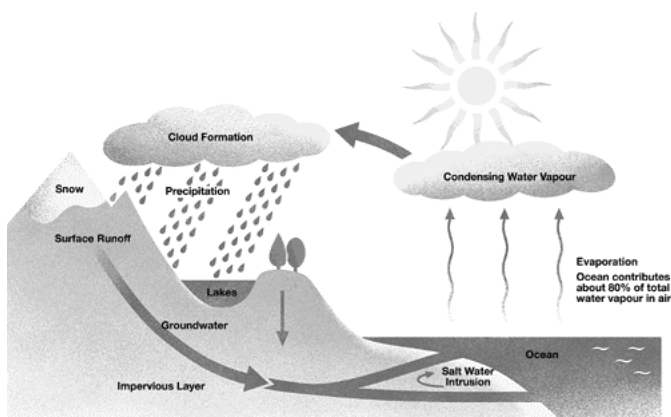
**QUESTION 10**

Joan has a mixture of sand and salt crystal in a container. She needs to separate the salt from the sand. Which of the following is the correct sequence of procedures she will use to separate the mixture of sand and salt.

- A. dissolve → evaporate → filter
- B. evaporate → dissolve → filter
- C. dissolve → filter → evaporate
- D. filter → evaporate → dissolve

**QUESTION 11**

Refer to the diagram below.

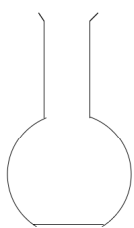


The diagram represents

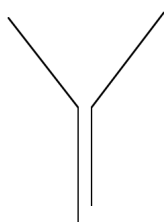
- A. cool air currents.
- B. warm air currents.
- C. water cycle.
- D. cloud cycle.

**Questions 12 and 13, refer to the information below.**

James was given a solution of salt and water and the following pieces of equipment by his teacher



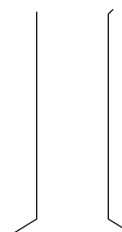
(i)



(ii)



(iii)



(iv)

**QUESTION 12**

Which of the above are the correct apparatus to use to separate salt from water?

- A. (i) and (ii) only
- B. (ii) and (iii) only
- C. (iii) only
- D. (iv) only

**QUESTION 13**

Which of the above can be used to measure the volume of both solids and liquids?

- A. (i)
- B. (ii)
- C. (iii)
- D. (iv)

**QUESTION 14**

Which organisms in the following list are vertebrates?

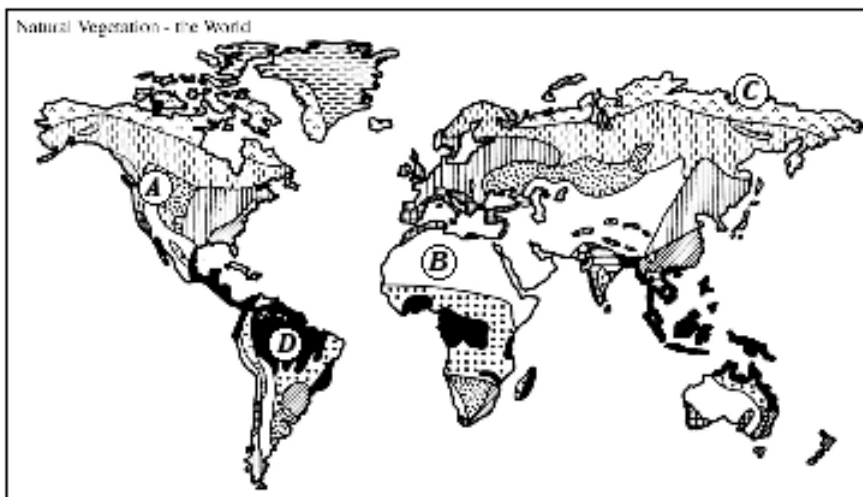
- (i) hibiscus,    (ii) earthworm    (iii) dog    (iv) human being    (v) crocodile
- A. (i), (iii) and (iv)
- B. (ii), (iii) and (v)
- C. (iii), (iv) and (v)
- D. (ii), (iv) and (v)

For Questions 15 and 16, refer to the map below.

**QUESTION 15**

Which climatic region is represented by the letter C?

- A. Tropical
- B. Sub-tropical
- C. Temperate
- D. Polar

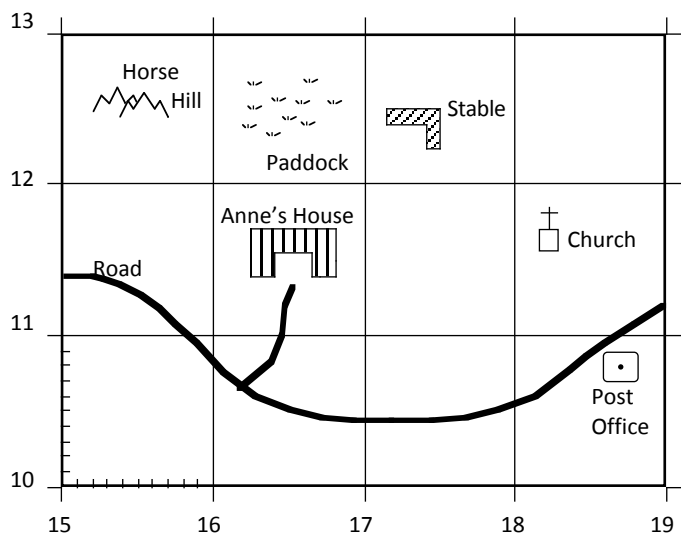


**QUESTION 16**

Letter A represents the climatic region that has four seasons. This place is located in the

- A. tropics.
- B. sub tropics.
- C. poles.
- D. temperate region.

For Questions 21 and 22, refer to the map below.



**QUESTION 21**

What is the four-figure grid reference for Horse Hill?

- A. 1511
- B. 1613
- C. 1215
- D. 1512

**QUESTION 22**

What is found in area reference 1811?

- A. church
- B. paddock
- C. post office
- D. stables

**For Questions 17 and 18, refer to the information below.**

Dugong hunting is a threat to biodiversity

Dugongs live in the waters of 43 different countries. Over-harvesting and other threats have made many populations of dugongs extinct. According to the 2000 International Union for the Conservation of Nature (IUCN) Red List of Threatened Species, dugongs are a vulnerable species.

Many of the world’s dugongs live in Australian waters. The number of dugongs is decreasing in some places, such as the southern region of the Great Barrier Reef World Heritage Area. According to the Queensland Government’s *Nature Conservation Act 1992*, dugongs are listed as ‘vulnerable to extinction’.

**QUESTION 17**

According to the passage, what is the main cause of dugongs becoming extinct?

- A. They are not breeding well.
- B. Due to over harvesting.
- B. Food sources are polluted.
- D. The Australian waters are too cold.

**QUESTION 18**

What does the word extinction mean?

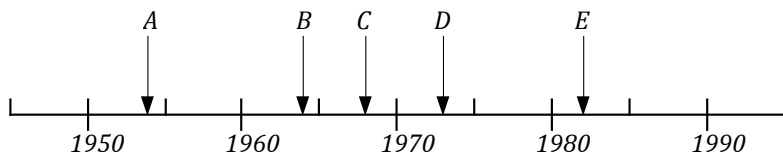
- A. dying out completely
- B. existing in small numbers
- C. evolving into other forms
- D. severely threatened

**For Question 19 and 20, refer to the information below.**

<b>Establishment of Constitutional Government in PNG</b>	
1982 – Election for third National Parliament	1972 – Election for Third House of Assembly
1977 – Election for second National Parliament	1968 – Election for Second House of Assembly
1975 – PNG becomes Independent	1964 – Election for First House of Assembly
1973 – PNG becomes Self Governing	1952 – First Legislative Council meets

Timeline showing important events in PNG’s Political History.

**QUESTION 19**



Which letter on the timeline above represents the year elections for first House of Assembly were held?

**QUESTION 20**

How many years did it take from the Second National Parliament election to the next Parliament elections?

- A. 7
- B. 6
- C. 5
- D. 4

**For Questions 23 to 25, refer to the article below.**

**Information supplied by MINERAL RESOURCE AUTHORITY.**

PAPUA New Guinea is a Mining State, a title associated with a country with more than 50% of its GDP, and 30% of its export revenue from minerals. Papua New Guinea is ranked in the top 10 destinations for mineral exploration and development (Raw Materials Group survey, 2008).

**PNG Gold Silver and Copper Production 2008**

<b>MINE</b>	<b>GOLD (Oz)</b>	<b>Silver (Oz)</b>	<b>Copper (t)</b>
Kainantu	-	-	-
Lihir	882,000.00	60,643.99	-
OK Tedi	515,400.00	-	159,700.00
Porgera	632,400.00	90,859.45	-
Simberi	51,541.22	316,208.17	-
Sinivit	6,902.80	876.00	-
Tolukuma	39,889.41	122,007.08	-
<b>TOTAL</b>	<b>2,128,276.20</b>	<b>590,594.69</b>	<b>159,700.00</b>

**QUESTION 23**

Which of these mines in Papua New Guinea extracted both gold and copper in 2008?

- A. Tolukuma      B. Simberi      C. OK Tedi      D. Kainantu

**QUESTION 24**

Which mine did not produce any minerals in 2008?

- A. Sinivit      B. Porgera      C. Lihir      D. Kainantu

**QUESTION 25**

According to the text, why is Papua New Guinea given the title 'Mining State'? Because

- A. it produces gold, silver and copper as well as coffee and tea.  
 B. natural resources account for more than 30% of export revenue.  
 C. PNG is a member of the resource mineral group survey.  
 D. Minerals account for 50% of GDP and 30% of export revenue.

**PART B (QUESTIONS 26 to 45)**

**For each question in this section, write your answer in the space provided next to the Question number on the Answer Sheet**

**For Questions 26 and 27, refer to the following information.**

Below is a table which gives the characteristics of two substances labelled M and N.

<b>Substance M</b>	<b>Substance N</b>
<ul style="list-style-type: none"> <li>• tastes sour</li> <li>• found in citrus fruits</li> <li>• turns litmus red</li> <li>• has pH of 1-6</li> </ul>	<ul style="list-style-type: none"> <li>• tastes bitter</li> <li>• found in common household detergents</li> <li>• turns litmus blue</li> <li>• has pH of 8-14</li> </ul>

**QUESTION 26**

What type of substance is Substance M?

**QUESTION 27**

What would be the pH of a mixture of equal amounts of substance M and substance N?

**For Questions 28 to 30, refer to the following table.**

<b>SKILLS</b>	<b>GAME</b>
<b>COLUMN A</b>	<b>COLUMN B</b>
1. Running and throwing the ball over arm at a target.	Cricket
2. Dribbling and controlling the ball with both hands.	Basketball
3. Using the sole of the foot to trap and control the ball.	Soccer
4. Throwing a small ball under arm.	Softball
5. Kicking an oval shaped ball into a goal to score 6 points	Aussie Rules

**QUESTION 28**

Which game from Column B is played using all parts of your body except your hands?

**QUESTION 29**

Which game from Column B would someone be playing using skill No. 4?

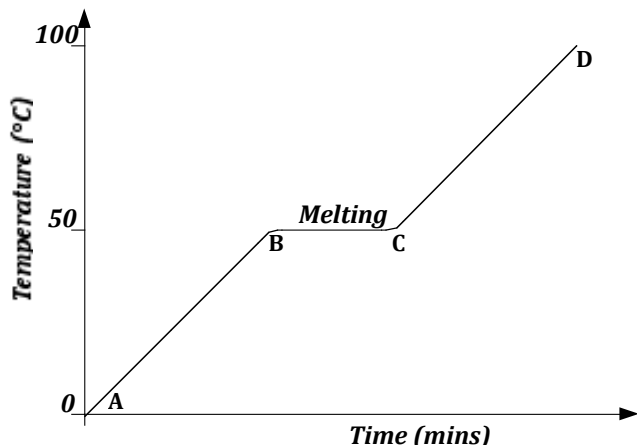
**QUESTION 30**

Which skill from Column A is best used to play to play cricket?



For Questions 31 to 33, refer to the following information.

Below is a graph showing the change in temperature over time as wax is heated.



**QUESTION 31**

Which part of the graph shows that a change of state is taking place?

**QUESTION 32**

What is the melting point of the wax?

**QUESTION 33**

What is the state of wax between C and D?

For Questions 34 and 35, refer to the table below, which shows the climate of Boulder, USA.

	Temperature (°C)			Rainfall (mm)
	Max.	Mean	Min.	
Jan	20	0	-30	20
Feb	21	2	-19	20
Mar	26	4	-14	45
Apr	24	9	-7	72
May	28	13	-3	80
June	36	18	6	52
July	38	23	6	30
Aug	34	21	5	45
Sep	32	17	0	30
Oct	27	12	-11	36
Nov	22	5	-15	25
Dec	19	1	-35	15

**QUESTION 34**

In which month is the highest maximum temperature expected to occur?

**QUESTION 35**

Which month has a rainfall of 20 mm and a minimum temperature of -19 °C?

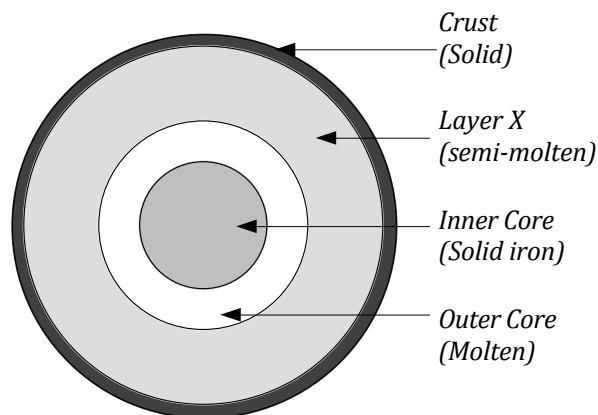
Questions 36 and 37 refer to the following information.

**QUESTION 36**

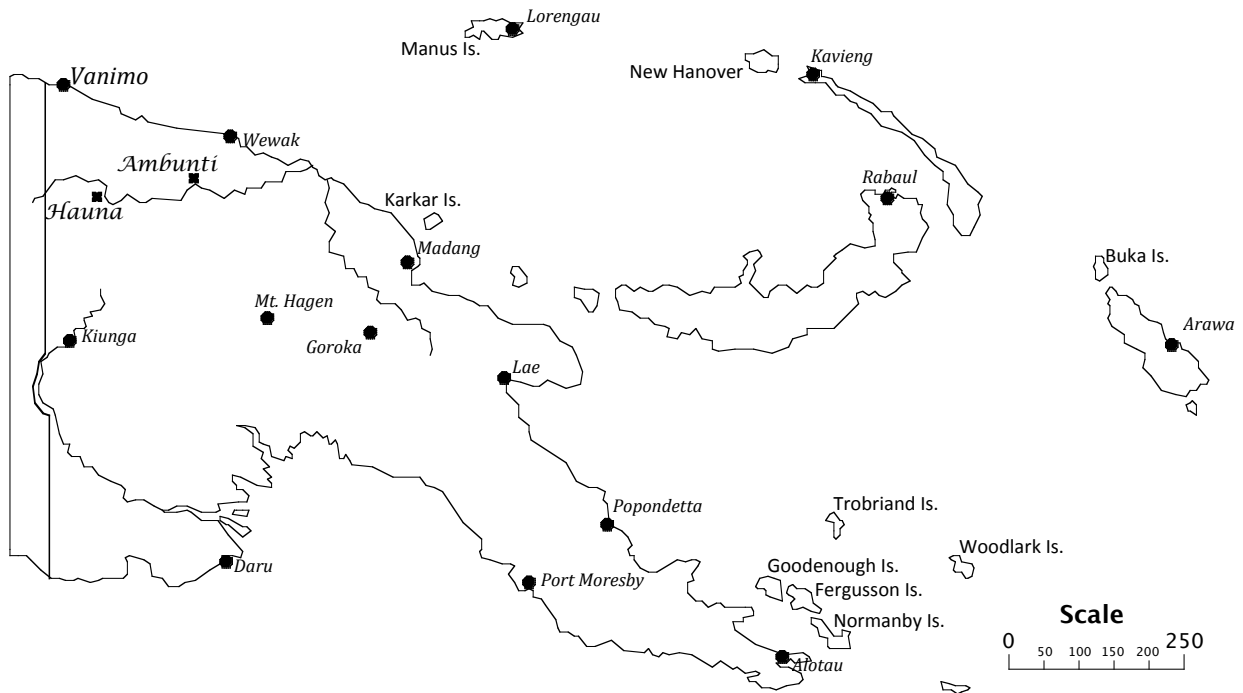
What is the name of the semi-molten layer labelled X?

**QUESTION 37**

What is formed when layer X is forced up through cracks in the crust?



For Questions 38 and 39, refer to the map and information below.



Wilson Amino is from Hauna Village, Ambunti in East Sepik Province. In January 2009 he travelled to Ambunti by outboard motor where he caught a plane to Wewak. He then travelled to Port Moresby on an Air Niugini flight to attend a DEPI Course at the Papua New Guinea Education Institute.

**QUESTION 38**

Calculate the total distance Wilson travelled by plane. (Approximate your answer to the nearest 50 km).

**QUESTION 39**

What direction did Wilson travel from Wewak to Port Moresby?

For Questions 40 and 41 refer to the following information.

**Health and Education Services in Wauwau**

	Government	Church	Total
<b>Health Services</b>			
Health Centres	1	1	2
Aid Posts	3	6	9
<b>Schools</b>			
High Schools	3	1	4
Primary Schools	3	5	8
Vocational Centres	1	2	3

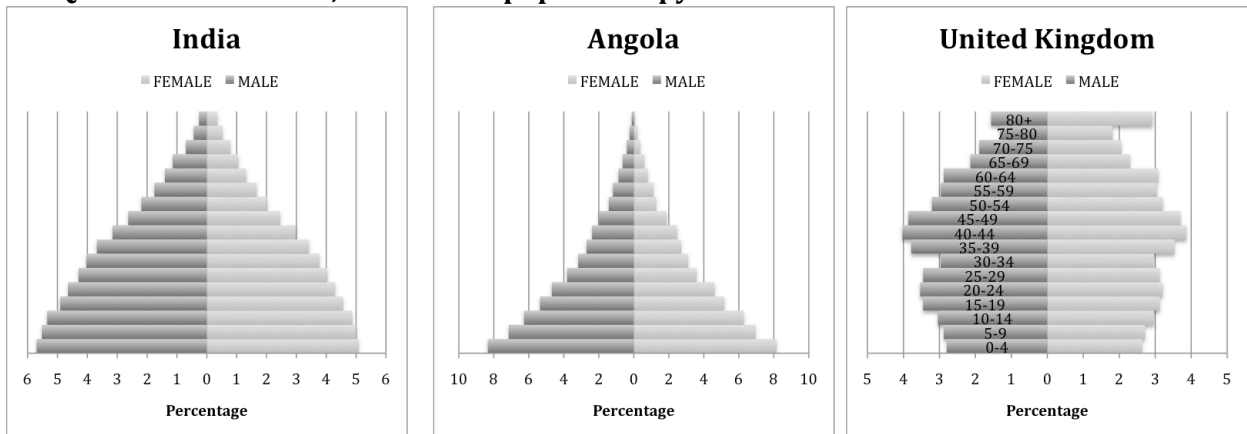
**QUESTION 40**

What percentage of primary schools are provided by the church in Wauwau? (To the nearest whole number)

**QUESTION 41**

Who provides most of the health and education services in Wauwau?

For Questions 42 and 43, refer to the population pyramids below.



**QUESTION 42**

In which country is the population probably growing at the fastest rate?

**QUESTION 43**

Give one reason why the population pyramid for the United Kingdom shows a high percentage of people over 60 years of age.

For Questions 44 and 45, refer to the table below.

The table below shows how action of supply demand and price operate in a market situation in Madang.

Type of crop	Number of farmers involved	Supply	Demand	Price
Watermelon	Few in July Many in November and December	Low High	High Low	High Low
Corn	Few in November Many in December and February	Low High	High Low	High Low
Cucumber	Few in November Many in December and February	Low High	High Low	High Low
Taro	Few in July Many in December and February	Low High	High Low	High Low
Banana	Few in August and October Many in December and March	Low High	High Low	High Low
Pawpaw	Few in July and August Many in February and August	Low High	High Low	High Low

**QUESTION 44**

What happens to prices when demand is high but the supply is low?

**QUESTION 45**

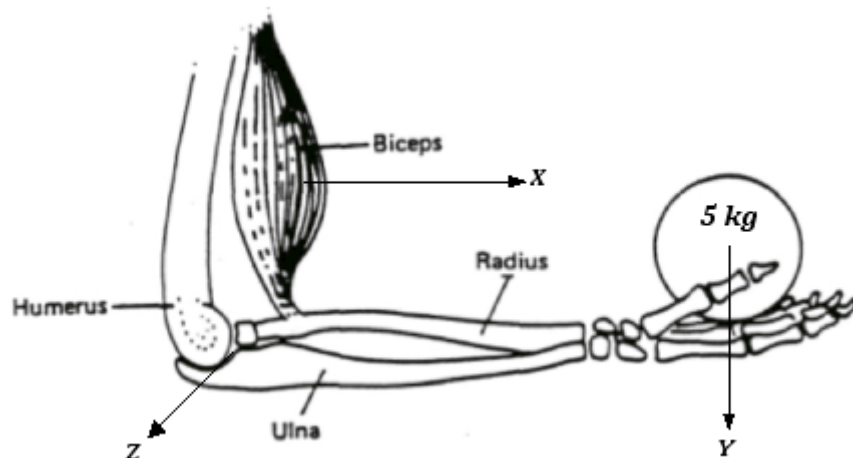
On the grid ON THE ANSWER SHEET, draw a straight line to show the relationship between the price of bananas and the quantity available for sale.

**PART C**

**This section consists of extended question worth 5 marks.**

**QUESTION 46**

John uses a force of 5 newtons to lift a weight a distance of 0.5 metres. His arm is acting as a lever as shown in the diagram below.



- (i) Label the diagram (X, Y, and Z) using the words pivot, load and effort.

X – \_\_\_\_\_

Y – \_\_\_\_\_

Z – \_\_\_\_\_

- (ii) Using the formula **WORK DONE = FORCE x DISTANCE**, calculate the work done by John in lifting the load. (Answer in Joules).

***END OF EXAMINATION***

**COMBINED SUBJECTS – ANSWER SHEET**



**MARKER 1**

YEAR		PROV.		SCHOOL			CAND NO.			SEX	AGE
<b>1</b>	<b>0</b>										
<b>NAME</b>											
<b>SCHOOL</b>											

**PART A: (Questions 1 to 25)**

Write the letter of your answer next to each question number below.

<b>1</b>		<b>6</b>		<b>11</b>		<b>16</b>		<b>21</b>	
<b>2</b>		<b>7</b>		<b>12</b>		<b>17</b>		<b>22</b>	
<b>3</b>		<b>8</b>		<b>13</b>		<b>18</b>		<b>23</b>	
<b>4</b>		<b>9</b>		<b>14</b>		<b>19</b>		<b>24</b>	
<b>5</b>		<b>10</b>		<b>15</b>		<b>20</b>		<b>25</b>	

**PART B (Questions 26 to 45)**

Write your answer next to each question number below.

<b>26</b>		<b>31</b>		<b>36</b>	
<b>27</b>		<b>32</b>		<b>37</b>	
<b>28</b>		<b>33</b>		<b>38</b>	
<b>29</b>		<b>34</b>		<b>39</b>	
<b>30</b>		<b>35</b>		<b>40</b>	

**PART C (Questions 46 to 50)**

Write your answers in the spaces below.

<b>41</b>		<b>46</b>	(i)	X	<b>MARKER 2</b>
<b>42</b>				Y	
<b>43</b>				Z	
<b>44</b>			(ii)		
<b>45</b>					

**DO NOT WRITE ON THIS PAGE**

**YOU MAY DO YOUR ROUGH WORK ON THIS PAGE**

**CAREFULLY TEAR ALONG THIS PERFORATION**

**YOU MAY DO YOUR ROUGH WORK ON THIS PAGE**