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: Multiple-Choice (Questions 1 to 25)
PART B: Short-Answer (Questions 26 to 45)
PART C: Extended Response (Question 46)

The Answer Sheet is part of the Examination Booklet. Take out the middle pages and remove the Answer Sheet by tearing along the perforation. You may use the blank sheet for rough work.

For each question in PART A choose the best answer by writing the letter A or B or C or D in the space provided on the ANSWER SHEET.

For each question in PART B and PART C 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 clear 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.

The penalty for cheating or assisting others to cheat in national examinations is non-certification.

DO NOT TURN OVER THIS PAGE AND DO NOT WRITE UNTIL YOU ARE TOLD TO START.
PART A – MULTIPLE CHOICE

For each question in PART A (Questions 1 to 25), choose the best answer by writing the letter A or B or C or D in the space provided on the ANSWER SHEET.

**QUESTION 1**

Flowering plants can be classified as either monocotyledons or dicotyledons.

Which of these groups are dicotyledous plants?

A. bean, rice, coffee, cocoa  
B. bean, cocoa, corn, wheat  
C. bean, cocoa, coffee, water melon  
D. bean, watermelon, corn, rice

**QUESTION 2**

Some factors important in animal husbandry are listed below.

A. nutrients, water and food  
B. environment, husbandry and management  
C. genes, environment and management  
D. characters, heredity and genes

**QUESTION 3**

Before filling up soil in seed boxes John cooks the soil using a half cut gallon drum. What is the purpose of cooking the soil?

A. sterilization  
B. softening  
C. fertilization  
D. hardening

**QUESTION 4**

The earliest agricultural site from 9000 years ago in Papua New Guinea identified by archaeologists is

A. Kuk in Western Highlands Province  
B. Markham Valley in Morobe Province  
C. Ramu in Madang Province  
D. Hidden Valley in Morobe Province

**QUESTION 5**

Which of these plant foods are fruit crops?

A. peanut, bean, mango, cabbage  
B. peanut, bean, cabbage, coffee  
C. peanut, avocado, mango, coffee  
D. peanut, bean, avocado, cabbage
For questions 6 and 7 refer to the pie graph below.

![Pie chart showing the composition of a good soil]

**QUESTION 6**
What percentage of a good soil is made up of air?
A. 5%   B.  
C. 30%   D.  

**QUESTION 7**
What percentage of a good soil will consist of organic matter and minerals?
A. 5%   B.  
C. 45%   D.  

**QUESTION 8**
One way to sustain plant food in the soil after harvesting a batch of crops is to plant legumes. Before the legumes flower they are ploughed back into the soil. This is called
A. green manuring   B. animal manuring  
C. composting   D. decomposing  

**QUESTION 9**
The farming system that involves growing, looking after and harvesting plants or fish in water is known as
A. agriculture   B. aquaculture  
C. agronomy   D. horticulture  

**QUESTION 10**
Which of these is **NOT** a property of clay?
A. swells when wet   B. retains a lot of water  
C. allows easy water movement   D. cracks when dry
QUESTION 11
How does HIV and AIDS have a negative impact on food security?
A. threatens the labour force.  B. causes food contamination
C. lowers immune system of animals  D. security officers die of AIDS.

QUESTION 12
Which of these is a cereal crop?
A. sweet potato  B. peanut  C. corn  D. bean

QUESTION 13
What are swim bladders in fish used for?
A. for buoyancy  B. breathing
C. movement  D. reproduction

QUESTION 14
Which part of the world did kaukau originate?
A. South Africa  B. South America  C. Philippines  D. Europe

QUESTION 15
Herbicides are chemicals used for controlling

QUESTION 16
Organic matter in soil comes from
A. remains of plants and animals.  B. rocks and minerals.
C. remains of plants only.  D. bacterial action on artificial manure.

QUESTION 17
Agriculturalists, food technologists and farmers are encouraged to address food security. Which of the following does NOT address food security?
A. drying chilli  B. covering raw fish with a cloth
C. smoking fish  D. rice packed in a plastic bag
For Questions 18 and 19, refer to the project timeline.

**PROJECT TIMELINE**

Prepare the ground, add compost and collect planting material.

Plant the aibica cuttings

Cultivat, mulch and prune to encourage side shoots.

Harvest and sell at the market.

October 2008

TOTAL TIME = 8 MONTHS

May 2009

**QUESTION 18**

When was the aibica first harvested?

A. February 2008  
B. October 2008  
C. May 2009  
D. February 2009

**QUESTION 19**

In order to have continuous production, when should you prepare and plant the next aibica garden?

A. January 2008  
B. January 2009  
C. November 2008  
D. May 2009

**QUESTION 20**

The diagram shows 4 different soils placed in each funnel over a beaker. Same volume of water is added to each funnel and the volume of water collected in each beaker after 10 seconds.

A  
B  
C  
D

Which soil has the biggest porosity?
QUESTION 21

The diagram below shows the nitrogen cycle.

Which of the statement about Nitrogen Cycle from the diagram is correct?

A. Nitrogen is made available to plants by lighting in the form of N₂.
B. Nitrogen is made available to plants as N₂ by bacteria decomposing dead organisms.
C. Nitrogen is made available to plants as NO₃ by bacteria in legume roots.
D. Corn plant gives off carbon dioxide (CO₂) which makes nitrate in the atmosphere.

QUESTION 22

What part of the plant is the peanut pod attached to?

A. leaf  B. stem  C. tap root  D. lateral root
**QUESTIONS 23**

The diagrams below show the behaviour of chicks in relation to the amount of heat produce by the heat source or lamp.

Which lamp shows how the day old chicks would behave when the heat source dies out on a cold night?

**For Questions 24 and 25, refer to the following information.**

The graph shows the cumulative weight broiler chicken and weight of feed eaten by weeks.

**QUESTION 24**

What was the average weight of the broilers at week 6?

A. 0.9 kg  
B. 1.2 kg  
C. 1.9 kg  
D. 2.2 kg

**QUESTION 25**

What is the most correct conclusion that could be drawn from this graph about broiler weight?

A. increased at a steady rate throughout the 10 weeks.  
B. gain is likely to continue for the next 10 weeks.  
C. depends on feed eaten.  
D. will fall back to its initial weight if feed is stopped.
PART B - SHORT ANSWERS

For each question in PART B (Question 26 to 45), work out the answer and write the answer in the space provided on the ANSWER SHEET.

**QUESTION 26**
Long time ago people in Papua New Guinea migrated from place to place and have settled in different places. Although there is less migration today, people still move to new places to plant their gardens. The practice of making gardens at new sites every planting season is called ________________.

**QUESTION 27**
Some people live on steep mountainsides. In order to prevent soil erosion, they cut into the mountainsides to make the land flat. It resembles a step like feature. This practice is called ________________.

For Questions 28 and 29, refer to the diagram.
The diagram shows the reproductive organ of a farm animal.

![Diagram of reproductive organ](image)

**QUESTION 28**
Name the organ labeled X.

**QUESTION 29**
Write down the letter that shows the organ in which a fertilized ovum rests and develops to a foetus.

**QUESTION 30**
What type of crop are peanuts, soybeans, winged beans and cowpeas known as?
**QUESTION 31**
What is the pest control technique that uses no artificial chemicals and poses no danger to the natural environment?

**For Questions 32 to 33, refer to the following diagram.**
An important chemical reaction takes place in the leaves of the food crop shown during the day enabling it to produce its own food.

![Diagram of Sunlight, Plant Leaf, and Gases X and Y]

**QUESTION 32**
What is the name of the process illustrated in the diagram above?

**QUESTION 33**
What is the name of the gas Y?

**For Questions 34 to 35, refer to the illustration.**
The illustration below shows the pH range from pH 1 to pH 14.0.

![pH Scale from 1.0 to 14.0]

**QUESTION 34**
A soil that has a pH value of 5.0 is said to be ______________.

**QUESTION 35**
A soil that has a pH value of 10 is said to be ______________.
For Questions 36 and 37, refer to the following information.
A rural farmer in Lumi grows corn and peanut and raises chicken and fish. He feeds the chicken with some of the corn and uses the manure from the chicken to feed the fish.

**QUESTION 36**
State another way in which he could make use of the chicken manure.

**QUESTION 37**
What type of farming system is this?

**QUESTION 38**
The same number of corn seed was planted in each of four pots. However, each pot had different soil and plant food.

Which pot would give the lowest crop yield?

**QUESTION 39**
A garden soil that is over used and then left for some years to regain its fertility is called ______________.

For Questions 40 to 43, refer to the following table.
Answer the questions by writing correct common name or the scientific name of the common crops listed below.

<table>
<thead>
<tr>
<th>Common name of crop</th>
<th>Scientific name of crop</th>
</tr>
</thead>
<tbody>
<tr>
<td>(40)</td>
<td><em>Cocos nucifera</em></td>
</tr>
<tr>
<td>(41)</td>
<td><em>Ipomoea batatas</em></td>
</tr>
<tr>
<td>corn</td>
<td>(42)</td>
</tr>
<tr>
<td>(43)</td>
<td><em>Arachis hypogaea</em></td>
</tr>
</tbody>
</table>
For Questions 44 and 45, refer to the following diagram of an agriculture food crop.

**QUESTION 44**
What type of root system does this crop have?

**QUESTION 45**
Name the male part of the plant.

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**PART C – EXTENDED RESPONSE QUESTIONS**

**QUESTION 46**
Name the correct farming practice required to improve the condition in each situation.

<table>
<thead>
<tr>
<th>Situation on hand</th>
<th>Correct farming practice required (one word only is required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Wilting leaves of cabbages in dry season</td>
<td></td>
</tr>
<tr>
<td>II Waterlogged soil</td>
<td></td>
</tr>
<tr>
<td>III Bushy coffee trees</td>
<td></td>
</tr>
<tr>
<td>IV Sprouting vanilla flowers</td>
<td></td>
</tr>
<tr>
<td>V A sow on heat</td>
<td></td>
</tr>
</tbody>
</table>

**END OF EXAMINATION**