

2
PAPER 2
ESSAY
[100 MARKS]

Answer all the questions in your answer booklet.

This paper is in two sections: A and B. Answer Question 1 in Section A and any other three questions in Section B.

Credit will be given for clarity of expression and orderly presentation of material.

SECTION A

[40 marks]

Answer all the questions in this section

1. (a) Figure 1(a) is an illustration of a natural cycle showing unnamed stages and processes labelled A, B, C and D with processes labelled P, Q, S and T. Study the figure carefully and answer the questions that follow.

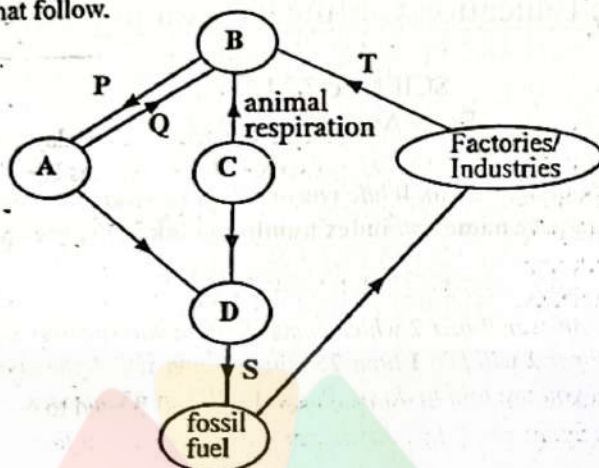


Figure 1(a)

- (i) Name each of the stages labelled A, B, C and D.
- (ii) Name each of the processes labelled P, S and T.
- (iii) State three activities of humans that could disrupt the cycle.

[10 marks]

- (b) Figure 1(b) is an illustration of two types of farming systems practised in Ghana labelled K and L. System K represents four farmlands labelled A, B, C and D and the arrows indicate movement of the farmer over a period of time as shown.

System L represents a farmland divided into four plots 1, 2, 3 and 4 and the arrows indicate the movement of the crops cultivated over the period.

Study the figure carefully and answer the questions that follow.

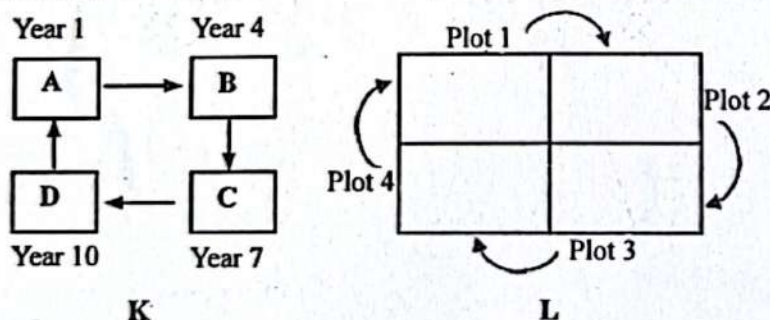


Figure 1(b)

- (i) Name each of the farming systems labelled K and L.
- (ii) Give the reason for each of the names given in (i).
- (iii) State two ways in which the farming system K is of importance to the farmer.
- (iv) Give three reasons why the farming system K is not being encouraged in recent times.
- (v) Name one type of crop that could be included in the farmland L to improve the fertility of the soil.

[10 marks]

- (c) Figure 1(c) is an illustration of a mason pulling a slab by means of a rope up an inclined plane. The labels I, II and III represent forces acting on the slab. Study the figure carefully and answer the questions that follow.

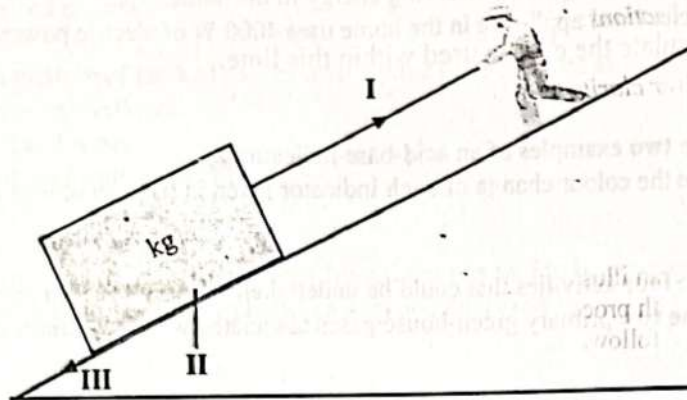


Figure 1(c)

- (i) Give three examples of the use of inclined planes in everyday life.
- (ii) Given that I is 400 N and moves a distance of 10 m while II is 100 N and moves a distance of 5 m, calculate the:
 - (a) work output;
 - (b) work input;
 - (c) efficiency.

[10 marks]

- (d) Figure 1(d) is an illustration of experimental set-ups A and B used to demonstrate a scientific principle. Study the figure carefully and answer the questions that follow.

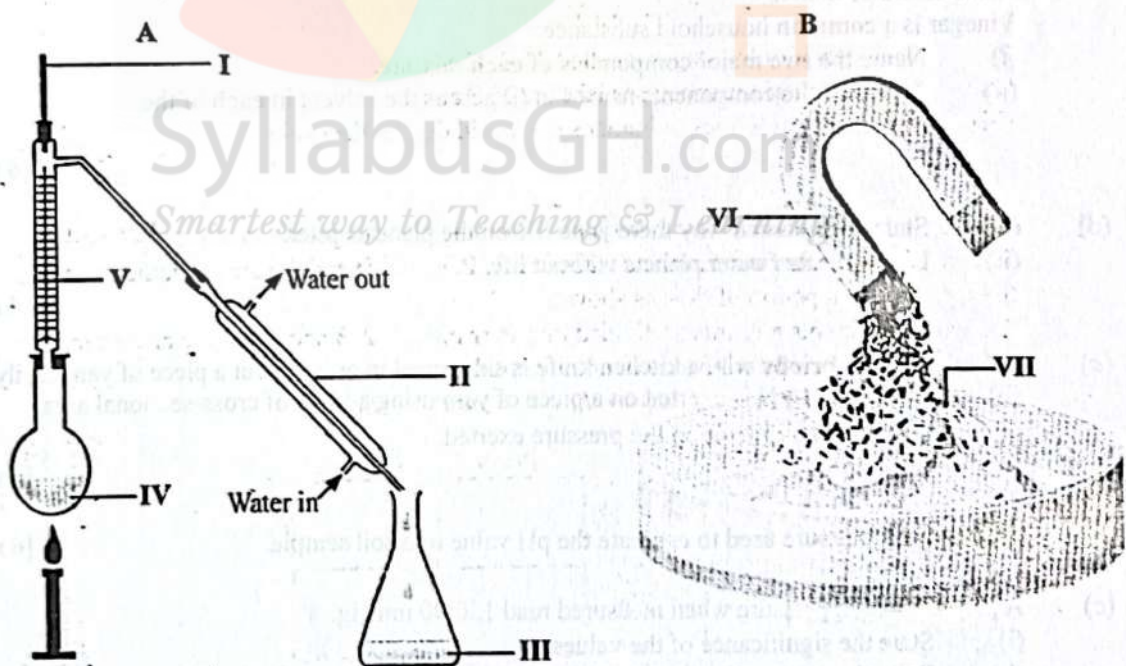


Figure 1(d)

- (i) Name the scientific principle being demonstrated in both A and B.
- (ii) Describe briefly the functions of each of the parts labelled II and VI.
- (iii) Name any two types of materials that could be present in each of the set-ups labelled:
 - (a) III;
 - (b) VII.
- (iv) Give the reason why the direction of water flow in A must not be reversed.

[10 marks]

SECTION B

[60 marks]

Answer three questions only from this section.

2. (a) (i) State **three** ways of conserving energy in the home.
 (ii) An electrical appliance in the home uses 4000 W of electric power every 12 hours. Calculate the energy used within this time. [7 marks]
- (b) (i) Give **two** examples of an acid-base indicator.
 (ii) State the colour change of **each** indicator given in (i) in an orange juice. [4 marks]
- (c) (i) State **four** activities that could be undertaken to ensure a green economy in Ghana.
 (ii) Name **two** primary green-house gases associated with industrialization. [6 marks]
- (d) Describe **briefly** how compost could be prepared for a backyard garden. [3 marks]
3. (a) Name **two**:
 (i) animal products used in preparing protein-rich feed for poultry;
 (ii) plant products used in preparing carbohydrate-rich feed for poultry. [4 marks]
- (b) Describe **briefly** the water cycle. [6 marks]
- (c) Consider the following mixtures:
 Air, vinegar.
 Air is essential to life.
 Vinegar is a **common** household substance.
 (i) Name the **two** major components of each mixture.
 (ii) Which of the components named in (i) acts as the solvent in **each** of the mixtures? [6 marks]
- (d) (i) State **two** reasons why there is no life on the planet Jupiter.
 (ii) List **two** other outer planets without life. [4 marks]
4. (a) (i) Explain **briefly** why a kitchen knife is sharpened in order to cut a piece of yam easily.
 (ii) A force of 10 N is exerted on a piece of yam using a knife of cross-sectional area $1 \times 10^{-3} \text{ m}^2$. Determine the pressure exerted. [6 marks]
- (b) Outline the procedure used to estimate the pH value of a soil sample. [6 marks]
- (c) A patient's blood pressure when measured read 150/90 mmHg.
 (i) State the significance of the values.
 (ii) State **three** remedies that could be recommended to the patient referred to in (c) other than medication. [5 marks]
- (d) State **three** characteristics of silage that has made its use desirable in recent times. [3 marks]

5. (a) Explain briefly how each of the following farming systems are practised:
- (i) organic farming;
 - (ii) mixed farming;
 - (iii) mixed cropping.
- [6 marks]
- (b) Classify a mixture of each of the following pairs of substances as either a homogeneous or heterogeneous mixture:
- (i) oil and water;
 - (ii) salt and water;
 - (iii) ethanol and water.
- [3 marks]
- (c) (i) Give two reasons why energy from the sun is said to be renewable.
 (ii) State three differences between *heat* and *temperature*.
- [5 marks]
- (d) Explain briefly two effects each of the following factors on the Nitrogen cycle:
- (i) leaching;
 - (ii) removal of leguminous plants.
- [6 marks]

END OF ESSAY TEST



SyllabusGH.com

Smartest way to Teaching & Learning