

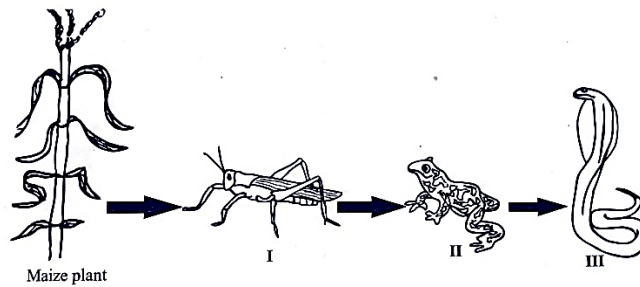
PAPER 2

[100 MARKS] SECTION A

[40 MARKS]

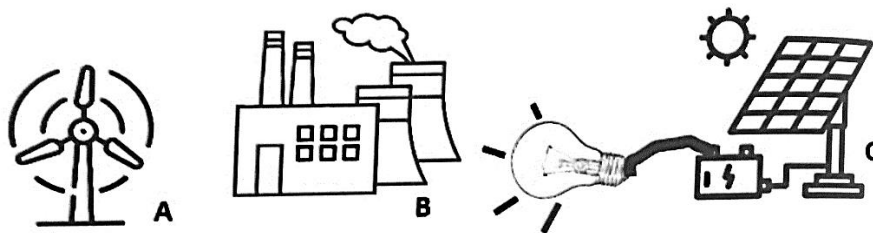
Answer all of Question

1. (a) The diagram below illustrates the feeding relationship between organisms in a particular habitat. Study it carefully and answer the questions that follow.



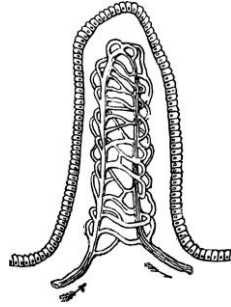
- (i) Identify the organism labelled **I**, **II** and **III**. [3 marks]
- (ii) What feeding relationship is illustrated in the diagram? [2 marks]
- (iii) Name **one** organism each that can be replaced by organism **I**, **II**, and **III**. [3 marks]
- (iv) Which of the organism is  
 (α) secondary consumer;  
 (β) primary consumer. [2 marks]

- (b) The figures below illustrate energy generation processes. Use them to answer the questions that follow.



- (i) State **one** name that applies to all of them. [2 marks]
- (ii) Identify the parts labelled **A**, **B**, and **C**. [3 marks]
- (iii) What is the main source of energy to the parts labelled **C**? [2 marks]
- (iv) What happens if the parts labelled **C** did not received it maximum energy? [2 marks]
- (v) Name **one** place where figure **A** is used? [1 mark]

c. Study the diagram below carefully and answer the questions that follow.



- i. Identify the structure illustrated above. (2 marks)
  - ii. In which part of the human alimentary canal is the structure found? (2 marks)
  - iii. Which function does the structure play in food digestion? (2 marks)
  - iv. State two features of the structure that enables it to perform the function you have stated in question (iii) above. (4 marks)
- d. An effort of 60 N is applied onto a 2-metre long rigid bar to lift a box weighing 180 N. The effort distance is 160 cm.
- i. Sketch the bar showing the effort, pivot and load. (3 marks)
  - ii. Calculate the load distance. (2 marks)
  - iii. What is the efficiency of the machine? (3 marks)
  - iv. Why is the effort distance longer than the load distance? (2 marks)