

20E(A)

GENERAL SCIENCE, Paper - II

(English version)

Parts A and B

Time : 2½ Hours

Maximum Marks : 50

Instructions :

1. Answer the questions under **Part-A** on a separate answer book.
2. Write the answers to the questions under **Part-B** on the Question Paper itself and attach it to the answer book of **Part-A**.

Part - A

Time : 2 Hours

Marks : 35

SECTION - I

4×1=4

Note :

1. Answer **ANY FOUR** questions from the following.
  2. Each question carries **ONE** mark.
1. The substances produced in plants are of two types, primary metabolites and secondary metabolites. Give an example for each type.
  2. What happens if blood platelets are absent in blood ?
  3. Write the phenotypic and genotypic ratios of Mendel's cross-pollination experiments in pea plants with heterozygous yellow seeds (Yy) with that of the same type, i.e., Yy.
  4. Write two sentences about insulin hormone using the data collected from your school library.
  5. Suggest an alternative method for using pesticides to save the crops from pests.



6. By taking two plants of your surroundings as examples, explain how they protect themselves against the animals which eat them ?

**SECTION - II**

5×2=10

- Note :**
1. Answer **ANY FIVE** questions, choosing atleast **two** from each Group **A** and **B**.
  2. Each question carries **TWO** marks.

**GROUP - A**

7. Differentiate the reactions that take place in presence of light and the reactions which do not require light in photosynthesis.
8. Define and explain Variations with examples.
9. What questions will you ask a doctor to know about endocrine glands ?
10. In Meiosis, the chromosome number in the daughter cells are reduced to half that of their parent cells. Guess, what would happen, if the reduction of chromosome number is not done ?

**GROUP - B**

11. Using the data collected by you, from internet and other sources, make a report on coagulation of blood.
12. In the food pipe, the food bolus is propelled into the stomach by peristaltic movement. Represent this action with a diagram.
13. How do you feel when you realize that plants respond to the stimuli of their surroundings ?
14. Rahul remarked that different human activities are responsible for global warming. What might be the reasons for his statement ?



**SECTION - III**

4×4=16

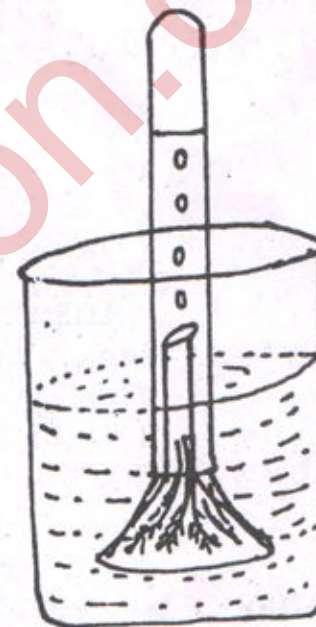
**Note :**

1. Answer **ANY FOUR** questions from the following, choosing at least **two** from each group **A** and **B**.
2. Each question carries **FOUR** marks.

**GROUP - A**

15. Answer the following questions by observing the diagram showing the experiment :

- (A) What will you prove by this experiment ?
- (B) What apparatus do you use in this experiment ?
- (C) What would be the results if the experiment is done in shadow ?
- (D) What will you do to obtain result from the experiment ?



16. Even though both are oxidation processes, combustion and respiration are different in many aspects. Explain those differences.
17. Explain how do plants get water from soil through their root hairs.
18. Write about respiration in mangroves that grow in marshy lands.

**GROUP - B**

19. Give reasons :

- (A) Hunger generating signals reach the brain when stomach gets empty.
- (B) When your stomach is filled with full of food, you feel you don't need food any more.
- (C) In severe cold and cough, one cannot feel the taste of the food.
- (D) We cannot identify the taste of a grape fruit, when it is placed on the tongue.



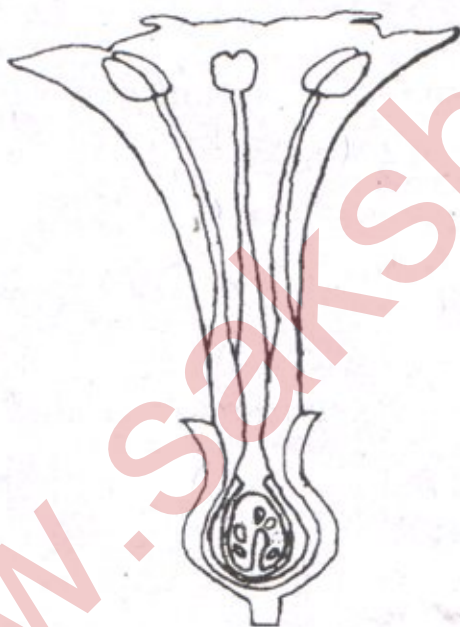
20. Forest is a renewable resource. But, each year, the Earth loses about 36 million acres of forest. In this type of situation, what suggestions do you give to save forests from turning into non-renewable resources ?
21. Fossils are the precious evidences preserved by the nature to help us knowing about ancient life forms. Write the information you collected about fossils.
22. All the living things have the right to live on this earth alongwith us. Prepare slogans to promote awareness in public about the conservation of bio-diversity.

### SECTION - IV

1×5=5

- Note :**
1. Answer **ANY ONE** question from the following.
  2. This question carries **FIVE** marks.

23. Draw a diagram of a Nephron, and explain its structure.
24. Answer the questions by observing the diagram :



- (A) What are the four main parts of a flower ?
- (B) Which part produce gametes ?
- (C) Which part help in pollination ?
- (D) Which part protect the flower during its bud stage ?
- (E) Which part will turn into a fruit in the future ?