

This Question Paper contains 4 printed pages.

20E (A)

## GENERAL SCIENCE, Paper-II

(Biological Sciences)

(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'**.
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### Part A

Time : 2 Hours

Marks : 35

### SECTION I

4 × 1 = 4

Notes : 1. Answer **any four** questions from the following.

2. Each question carries **one** mark.

1. Write any two substances present both in blood and urine.
2. Identify one food chain from your surroundings. Name the producers and different levels of consumers in that food chain.
3. When do you think that our pulse rate goes up?
4. When you are on a field trip, you might have collected some plants which contain alkaloids. Name the alkaloids which are harmful to us.
5. One experimenter cut the tails of parent rats, what could be the traits in offspring? Do the daughter rats contain tails or not? Write your statement.

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6. You have performed the activity of Seed Germination in a glass jar in your school lab. You might have observed the growth of shoot and root. What information did you record regarding the shoot growth after a week, if the glass jar is tilted and plant kept horizontally.

**SECTION II**

**5 × 2 = 10**

- Notes :** 1. Answer any five questions from the following, choosing at least two from each Group A and B.
2. Each question carries two marks.

**Group - A**

7. Vitamin A, D, E and K are fat soluble vitamins. Write the deficiency diseases and resources of these vitamins in a tabular form.
8. By the information provided by scientist William Harvey, complete the following table.

Sr. No.	Vessel Structure / Function	Artery	Vein
1	Thickness of walls (thick/thin)		
2	Valves (present/absent)		
3	Pressure in the vessels (low/high)		
4	Direction of blood flow (heart to organs/body organs to heart)		

9. Distinguish between stimulus and response.
10. What steps do you take to improve natural resources?

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**Group - B**

11. What changes occur in the wall of the uterus during menstruation?
12. One student wants to cross pure tall (TT) with pure dwarf (tt) plant, what would be the  $F_1$  generation? Explain.
13. Draw the block diagram showing sensation of taste from food material to brain.
14. Hormones are released at a specific place, specific time for specific function. Prepare a cartoon on hormones with a nice caption.

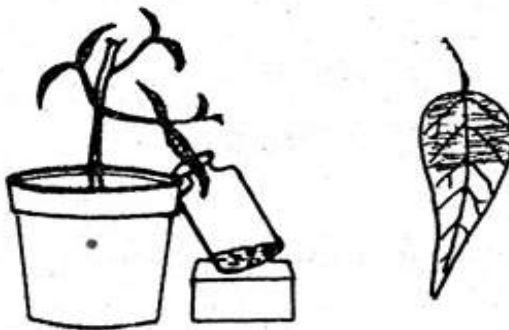
**SECTION III**

4 × 4 = 16

- Notes :**
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) Why do we use *KOH* solution in this experiment?
- d) Why did we study two leaves in this experiment?

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16. Distinguish between aerobic and anaerobic respiration.
17. What are your observations in combustion of sugar activity?
18. What is coagulation of blood? Write the uses of platelets.

**Group - B**

19. What is the function of peristalsis in these parts?
  - a) Oesophagus
  - b) Stomach
  - c) Small intestine
  - d) Large intestine
20. Write about the carbon dating method from the information collected by you.
21. Why should we conserve forests and wild life?
22. Which slogans do you prefer to promote awareness in your locality about ecofriendly activities?

**SECTION IV**

**1 × 5 = 5**

- Notes :** 1. Answer **any one** question from the following.  
2. Each question carries **five** marks.

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  24. Draw a neat labelled diagram of structure of ovule.
-

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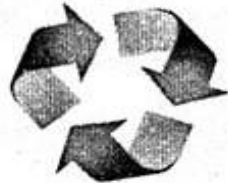
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3. Diabetes millitus is related to this gland. [     ]  
 (A) Pituitary (B) Thyroid  
 (C) Pancreas (D) Adrenal
4. The part of the female reproductive system that produces the eggs is ..... [     ]  
 (A) cervix (B) epididymis  
 (C) ovary (D) fallopian tube
5. The region in brain portion that controls hunger pangs is ..... [     ]  
 (A) mid brain (B) medulla  
 (C) diencephalon (D) cerebrum
6. Percolation tanks helps to ..... [     ]  
 (A) prevent floods during rainy season  
 (B) supply water for agriculture  
 (C) preserve rain water  
 (D) increasing ground water level
7. What does a food chain always start with? [     ]  
 (A) The carnivore (B) The producer  
 (C) The herbivore (D) None of these
8. What is the name of the cell organelle? [     ]  

 (A) Membrane  
 (B) Mitochondria  
 (C) Chloroplast  
 (D) None of these
9. The rate of photosynthesis is not affected by ..... [     ]  
 (A) humidity (B) temperature  
 (C) light intensity (D)  $CO_2$  concentration
10. On which side of the human heart is low in oxygen? [     ]  
 (A) Right auricle – right ventricle  
 (B) Left auricle – left ventricle  
 (C) Right auricle – left ventricle  
 (D) Left auricle – right ventricle

11. The excretory organ in cockroach is ..... [     ]  
 (A) nephridia (B) malpighian tubules  
 (C) raphids (D) ureters

12. The partly digested food in the stomach is called ..... [     ]  
 (A) chyme (B) bolus  
 (C) bone (D) muscle

13. This logo indicates ..... [     ]



- (A) reuse  
 (B) reduce  
 (C) recycle  
 (D) all of these

14. The end product of photosynthesis is ..... [     ]  
 (A) glucose (B) oxygen  
 (C) water (D) all of these

15. Parthenogenesis occurs in ..... [     ]  
 (A) bees (B) wasps  
 (C) ants (D) all of these

16. Identify the 'X'. [     ]



- (A) Bowman's capsule  
 (B) Vein  
 (C) Vessel  
 (D) Cup

17. Who is known as father of genetics? [     ]  
 (A) Mendel (B) Darwin  
 (C) Watson (D) Lamarck

18. ICRISAT is in ..... [     ]  
 (A) Bangalore (B) Hyderabad  
 (C) Chennai (D) Pune

19. If the pH of a substance is below 7, it is ..... in nature. [     ]  
 (A) alkaline (B) acidic  
 (C) neutral (D) none of these

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20. Plant → Insect → frog →  [     ]  
(A) snake (B) egg  
(C) flower (D) none of these

II. Fill in the blanks with the suitable answers. 5 × ½ = 2½

21. 3 : 2 : 1 : 2 the ratio of our dentition. Here '1' represents .....
22. Petrol, coal are examples of ..... resources.
23. Cultivation of paddy is suitable for ..... areas.
24. Expand PCT .....
25. The process of acquiring change is called .....

III. Match the following by writing the letter of the correct answer in the brackets, choosing from **Group B**. 5 × ½ = 2½

- | <i>Group 'A'</i>      |         |     | <i>Group 'B'</i>                |
|-----------------------|---------|-----|---------------------------------|
| 26. Galen             | [     ] | (A) | Cardiac, respiratory activities |
| 27. Medulla oblongata | [     ] | (B) | Nerves coordinations            |
| 28. Testis            | [     ] | (C) | Chemical coordinations          |
| 29. Auxin             | [     ] | (D) | Testosterone                    |
| 30. Endocrine system  | [     ] | (E) | Indole Acetic Acid              |
|                       |         | (F) | Gibberellins                    |