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**SCIENCE ( Theory ) — Paper II**  
**( Botany and Zoology )**

Time Allowed :  $2\frac{1}{2}$  Hours ]

[ Maximum Marks : 100

**PART - I**

**( BOTANY )**

( Marks : 50 )

**SECTION - A**

Answer *all* the questions.

- I. A) Choose and write the correct answer : 5 × 1 = 5
1. Lateral roots develop from which of the following regions only ?
    - a) Pericycle
    - b) Vascular bundles
    - c) Endodermis
    - d) Epidermis.
  2. The appearance of a pile of coins is
    - a) Thylacoids
    - b) Granal unit
    - c) Ribosome
    - d) RNA.
  3. Epinasty of leaves is caused by
    - a) ABA
    - b) Auxin
    - c) Ethylene
    - d) Gibberellin.
  4. The flow of energy from one trophic level to another is called
    - a) Pathway
    - b) Transport
    - c) Food chain
    - d) Decomposer.
  5. Recombinant DNA technology is used in the production of
    - a) Vaccines
    - b) Resins
    - c) Oils
    - d) Antibiotics.

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5 × 1 = 5

B) Match the following :

- i) Paraplasm
- ii) Nerium
- iii) Acacia
- iv) CFC
- v) Quinine

- a) Amoebic dysentery
- b) Acid rain
- c) Sunken stomata
- d) Racemose branching
- e) Cymose branching
- f) Ergastic substances
- g) Ozone depletion.

**SECTION - B**II. Answer any *ten* of the following :

10 × 2 = 20

A) Differentiate between the following pairs ( any *two* points only ) :

1. T.S of Dicot root and Dicot stem.
2. Respiration and Combustion.
3. Producer and Consumer.

B) Give reasons for the following :

4. Salt is added in the preparation of Pickles.
5. Iodine and KOH is Mohl's experiment.
6. Silencers are used in two wheelers.

C) Give any *two* practical applications of the following :

7. Stomata.
8. Nucleus.
9. Ocimum.

D) Answer the following briefly :

10. Define Ascent of Sap.
11. What is Fermentation ?
12. Mention two methods of Prawn culture.

**SECTION - C**III. Answer any *four* of the following :

4 × 5 = 20

13. Draw a neat labelled diagram to show the internal structure of the root.
14. Draw a neat labelled sketch of chloroplast.
15. Bring out the significance of transpiration.
16. Explain the experiment to show that CO<sub>2</sub> is needed for photosynthesis.
17. Describe the structure of mitochondria.
18. How is water pollution caused ?
19. Explain the role of genetic engineering in food and medicine.

**PART - II****( ZOOLOGY )**

( Marks : 50 )

**SECTION - A**Answer *all* the questions.

I. A) Choose and write the correct answers :

5 × 1 = 5

1. Pick the odd one out :

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|---------------|----------------|
| a) Anal style | b) Nuptial pad |
| c) Vocal sac  | d) Alveolus.   |

2. Pulse can be felt in

- |                |                  |
|----------------|------------------|
| a) Veins       | b) Arteries      |
| c) Capillaries | d) All of these. |

3. Vitamin B<sub>1</sub> is also called as

- |             |                |
|-------------|----------------|
| a) Thiamine | b) Riboflavin  |
| c) Niacin   | d) Pyridoxine. |

4. The hormone which prepares the body to face emergency situation is

- |            |                 |
|------------|-----------------|
| a) Relaxin | b) Parathormone |
| c) Thymus  | d) Adrenaline.  |

5. The study of population is called

- |               |                 |
|---------------|-----------------|
| a) demography | b) natality     |
| c) mortality  | d) immigration. |

B) Match the following :

5 × 1 = 5

- |                 |                   |
|-----------------|-------------------|
| i) Lacteal      | a) Vision         |
| ii) Pelvis      | b) Mitral valve   |
| iii) Optic lobe | c) HIV            |
| iv) Vitamin C   | d) Villus         |
| v) Robert Gallo | e) Scurvy         |
|                 | f) Kidney         |
|                 | g) Thyroid gland. |

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**SECTION - B**II. Answer any *ten* of the following :

10 × 2 = 20

- A) Differentiate between the following pairs ( any *two* points only ) :
1. Exocrine and Endocrine glands.
  2. Male and Female cockroach.
  3. Natality and Mortality.
- B) Give reasons for the following :
4. Blood of cockroach is called as Haemolymph.
  5. Burning sensation in the stomach.
  6. Osteomalacia.
- C) Give the importance of the following :
7. Elisa and Western Blot test.
  8. Alary muscles.
  9. Auditory Nerve.
- D) Answer the following briefly :
10. What is Frog's spawn ?
  11. What is a pacemaker ?
  12. What is placenta ?

**SECTION - C**III. Answer any *four* of the following :

4 × 5 = 20

13. Draw a neat labelled sketch of the Human Eye.
  14. Draw and label the diagram of the digestive system of Frog.
  15. Explain the nervous system of Cockroach.
  16. Describe the mechanism of excretion in man.
  17. Discuss protein digestion.
  18. Explain the mechanism of respiration.
  19. Give an account of Fat soluble vitamins.
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