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

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

[Maximum Marks : 100

SECTION - A

BOTANY

(Marks : 50)

I. Choose and write the correct answer :

5 × 1 = 5

1. The fungus employed in the baking and brewing industries is

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|----------------|-----------------|
| a) Penicillium | b) Agaricus |
| c) Yeast | d) Aspergillus. |

2. Ozone layer protects life on our planet by absorbing

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|-------------------|------------------------|
| a) oxygen | b) UV radiation |
| c) carbon dioxide | d) infrared radiation. |

3. The bigger portion of a monocot seed is the

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|-------------|---------------|
| a) plumule | b) hypocotyl |
| c) epicotyl | d) endosperm. |

4. The basic physiological unit of a plant is

- | | |
|----------|------------------|
| a) cell | b) tissue |
| c) organ | d) organ system. |

5. Chromosomes without centromere are called

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|----------------|--------------|
| a) monocentric | b) dicentric |
| c) holocentric | d) acentric. |

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- II. Fill in the blanks with suitable terms : 5 × 1 = 5
6. Formation of curd is due to bacteria.
 7. Excessive noise can lead to loss of
 8. Protoplast fusion is facilitated by using
 9. The term 'gene' was coined by
 10. In Sri Lanka the rhizome paste of is used to treat fracture.

- III. Answer any *five* of the following questions in one or two sentences each : 5 × 2 = 10

11. What is acid rain ?
12. What are antitranspirants ? Give two examples.
13. Write any two ayurvedic uses of neem.
14. Name any four types of bacteria based on flagellation.
15. What is plantation agriculture ?
16. Write the overall equation of respiration.
17. What is bolting ?
18. Draw a labelled diagram of a pome.
19. Define water potential.
20. What is parthenocarpy ?

- IV. Write short answers for any *four* of the following questions each in 100 words. Draw diagrams wherever necessary. Question No. **22** is compulsory. 4 × 5 = 20

21. Describe any two methods of plant breeding.
22. Draw a neat labelled diagram of a root showing root hair zone.
23. Explain the types of dry dehiscent fruits.
24. Write a note on special types of chromosomes.
25. Suggest measures to control air pollution.
26. Differentiate DNA from RNA.
27. Describe the process of conjugation in bacteria.

- V. Write a detailed answer for any *one* of the following questions in 200 words. Draw diagrams wherever necessary: 1 × 10 = 10

28. Explain the process of Dark reaction.
29. What is germination ? Describe epigeal germination with an example.

SECTION - B

ZOOLOGY

(Marks : 50)

I. Choose the correct answer :

5 × 1 = 5

1. When frogs are under water, they respire through
 - a) lungs
 - b) buccal cavity
 - c) skin
 - d) nostrils.
2. Carbon dioxide combines with reduced Haemoglobin to form
 - a) oxyhaemoglobin
 - b) oxygen
 - c) carbaminohaemoglobin
 - d) glucose.
3. The egg of human is free of yolk and it is said to be
 - a) microlecithal
 - b) alecithal
 - c) macrolecithal
 - d) isolecithal.
4. The Dolly, a cloned sheep was developed by
 - a) James Thomson
 - b) William Harvey
 - c) Ian Wilmut
 - d) Mendel.
5. Hyperglycemia destroys the tissue in the
 - a) liver
 - b) spleen
 - c) kidney
 - d) heart.

II. Fill in the blanks with suitable terms :

5 × 1 = 5

6. The inner wall of the small intestine has numerous finger like projections called
7. All non-domesticated Biota found in natural habitat are called
8. Introduction of a new gene into the cell is known as
9. Alpha cells of islets of Langerhans secrete
10. The breakdown of organic materials by worm activity is called

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III. Answer any *five* of the following questions in one or two sentences each :

5 × 2 = 10

11. What is meant by assimilation ?
12. Draw a labelled sketch of human lungs.
13. What are the effects of deficiency of Antidiuretic hormone ?
14. Define cleavage.
15. Mention any two important functions of the egg.
16. Write a note on 'Project Tiger'.
17. Name few fauna found in the Deccan Plateau.
18. What is meant by polydipsia ?
19. What is meant by natural immunity ?
20. What is allograft ?

IV. Write short answers for any *four* of the following questions in 100 words each. Draw diagrams wherever necessary. Question No. **24** is a compulsory question.

4 × 5 = 20

21. Describe the female Urinogenital system of frog with a neat labelled diagram.
22. Describe the pulmonary respiration in frog.
23. Explain Ulcer. Write a note on symptoms and treatment of it.
24. Draw neat labelled sketch of a mature human sperm.
25. Write a short note on role of man in the Biosphere.
26. List down the steps to be followed to prevent addiction to alcohol.
27. Write a short note on prawn culture.

V. Write detailed answer for any *one* of the following in 200 words. Draw diagrams wherever necessary :

1 × 10 = 10

28. Explain the process involved in tissue culture in animals.
29. Explain the composition of blood.

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