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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

- A symbiotic nitrogen fixing bacterium is
 - Rhizobium
 - Bacillus
 - Nitrobacter
 - Pseudomonas.
- The pollution caused by the activities of man is called
 - Hydrogenic
 - Pathogenic
 - Anthropogenic
 - Phytogenic.
- An example for stone fruit is
 - apple
 - cucumber
 - mango
 - tomato.
- The concept of two pigment systems was proposed by
 - Arnon
 - Hill
 - Calvin
 - Emerson.
- The chromosomal number is more than 1000 in.
 - ophioglossum
 - cycas
 - man
 - whale.

[Turn over

II. Fill in the blanks with suitable terms :

5 × 1 = 5

6. The process of enrichment of nutrients in water is known as
7. The term 'Vaccine' was coined by
8. An antibiotic obtained from *Bacillus subtilis* is
9. The pungent principle of ginger is
10. Hybrid vigour is also called as

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

5 × 2 = 10

11. What is tissue culture ?
12. Draw a labelled sketch of a multiple fruit.
13. Why is ABA called stress hormone ?
14. What is Gram Stain ?
15. Mention any two drugs used in Siddha Medicine.
16. What is meant by Eutrophication ?
17. What is pappus ? Mention its significance.
18. Define photolysis of water.
19. Draw a succulent Xerophyte and label its parts.
20. Name two macronutrients. Write their physiological role.

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. Enumerate the control measures of noise pollution.
22. Draw a neat labelled diagram of ultrastructure of chloroplast.
23. Write about aggregate fruit with an example.
24. Explain asexual reproduction in *Penicillium*.
25. Write a note on the special types of chromosomes.
26. Write notes on the following :
 - a) Hybridization
 - b) Polyploid breeding.
27. Describe Watson and Crick model of DNA.

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 mechanism of aerobic respiration.
29. Explain the stages of hypogeal germination in Maize.

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

5 × 2 = 10

40. What is bronchitis ?
41. Write very short note on dwarfism.
42. Draw and label the cross-section of an artery.
43. What is amphimixis ?
44. Define gastrulation.
45. Expand (i) IUCN and (ii) BSP.
46. Mention any four important sanctuaries in Tamil Nadu.
47. What is polyphagia ?
48. What is antibody ?
49. What is dialysis ?

IX. Write short answers for any *four* of the following questions in 100 words each. Draw diagrams wherever necessary. Question No. **53** is compulsory.

4 × 5 = 20

50. Describe the urinogenital system of male frog.
51. Write short note on cutaneous respiration in frog.
52. Explain the structure and function of an intestinal villus in man.
53. Draw a neat labelled sketch of Hen's egg.
54. Explain man in the biosphere.
55. Write a note on renal failure.
56. Write short note on organ transplantation.

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

1 × 10 = 10

57. Explain the structure and function of Thyroid gland.
 58. Describe the development of 'Dolly' (Diagram can be given in the form of a flowchart).
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