



Instruction :-

- i) Draw Diagrams wherever necessary.
- ii) Answer the extra question separately.

I Answer the following in one word or in one sentence.

10 x 1 = 10

1. Define stenohaline.
2. What is food chain?
3. Why are plant cells totipotent?
4. Name the plant from which cannabinoids are obtained.
5. Define tissue culture.
6. Why is oxytocin necessary for parturition?
7. Define parthenogenesis.
8. Define Global warming.
9. Which period is called "Age of Reptiles"
10. In which direction, the new strand of DNA is synthesized during DNA replication.

PART - B

II. Answer (any five) of the following.

5 x 2 = 10

11. Define Allen's rule.
12. What are "Selectable markers"? Mention its use in genetic engineering.
13. Where are Leydig's cells located? What do they secrete?
14. Which law of Mendel's is universally accepted? State the law?
15. Mention any four important characteristics of genetic code.
16. List out four hormones secreted by placenta.
17. Explain HIV replication.
18. Draw a neat labelled diagram of pollen grain.

PART - C

III. Answer (any Five) of the following.

5 x 3 = 15

19. Differentiate between spermatogenesis and Oogenesis.
20. a) What is triple fusion? Where and how does it take place? [2]
b) What is emasculation? [1]
21. a) What is speciation? [1]
b) List out any two events that led to speciation [2]
22. What is gene therapy? Mention its types.

23. Give a brief account on (any three) responses to abiotic factors.
24. Write a short note on :-
- a) Micropropagation [1 ½]
 - b) Green Revolution [1 ½]
25. Explain the structure of mRNA.
26. Write a note on sickle cell Anaemia.

PART - D₁

- IV. Answer (any four) of the following. 4 x 5 = 20**
27. Explain and draw a neat labelled diagram of the Bioreactor.
28. What are growth models. Explain logistics growth curve.
29. Draw a neat labelled diagram of sectional view of human female reproductive system.
30. a) Draw a neat labelled diagram of mature embryo sac. [3]
b) Mention two strategies evolved by flowers to prevent self-pollination. [2]
31. Explain steps involved in translation process.
32. Describe the Hardy - Weinberg equilibrium with an illustration.

PART- D₂

- V. Answer (any three) of the following. 3 x 5 = 15**
33. Draw a neat labelled diagram of the biogas plant. Mention the name of microbes used in the production of Biogas.
34. Outline salient features of 'C'- Cycling in ecosystem.
35. Write a note on :-
- a) Molecular Diagnosis. [2 ½]
 - b) Genetically engineered insulin [2 ½]
36. a) Define pollution. [1]
b) Classify the solid waste [1]
c) Mention the common methods of disposal of solid waste (any four) [2]
d) Write the case study for the remedy of plastic waste. [1]
