

MODEL QUESTION PAPER FOR SUMMATIVE ASSESSMENT

SUBJECT: BIOLOGY (36)

2nd year PUC

Time: 3 Hours and 15 minutes

Max Marks: 70

GENERAL INSTRUCTIONS:

- i) This question paper consists of four parts A, B, C and D .Part D consists of two parts, Section-I and Section-II.**
- ii) All the Parts are Compulsory.**
- iii) Draw diagrams whenever necessary. Unlabelled diagrams or illustrations do not attract any marks.**

PART-A

Answer the following questions in One Word or One Sentence each: - 10x1=10

1. Name the hormone that induces rupturing of Graafian follicle.
2. Sertoli cells are very much essential during spermatogenesis. Why?
3. Define convergent evolution.
4. Name the test conducted to confirm Typhoid fever.
5. What is micropropagation?
6. What are Flocs?
7. Mention the uniqueness of DNA polymerase used in PCR.
8. Mention the reason behind auto-immune disease.
9. Why Western Ghats are considered as one of the biodiversity hotspots?
10. "Some animals, if unable to migrate, might avoid the stress by escaping in time". Justify the statement citing one example.

PART-B

Answer any FIVE of the following questions in 3-5 sentences each, wherever applicable: 5x2=10

11. What is parthenogenesis? Name an animal showing this.
12. Differentiate between incomplete dominance and co dominance.
13. "Darwin's finches represent one of the best examples for adaptive radiation". Comment.
14. Draw a neat labeled diagram of an antibody molecule.
15. List the objectives of biofortification.
16. Draw a neat labeled diagram of sparged stirred tank bioreactor.
17. Write a note on co-extinction.
18. "India is rich in genetic diversity". Justify this statement by giving two examples.

PART-C

Answer any FIVE of the following Questions in 40-80 words each, wherever applicable. 5x3=15

19. Name the following:
 - i) Asexual reproductive structures of *Hydra*.
 - ii) Vegetative propagules of *Agave*.
 - iii) The plant that flowers once in twelve years.
20. Differentiate between microsporogenesis and megasporogenesis.
21. Write the pedigree analysis chart for myotonic dystrophy. Mention the importance of pedigree analysis.

22. Write notes on Evolution according to Lamarck. (2)
- b) Write the scientific name of man like primate who probably lived in East African grasslands about 3-4 million years ago. (1)
23. Describe the effects of drug abuse.
24. Write a note on downstream processing.
25. Draw the schematic representation of phosphorous cycle.
26. Define ecological succession. Mention two types of based on succession in plants.

PART-D

Section-I

Answer any FOUR of the following questions on 200-250 words each, wherever applicable. 4x5=20

27. Explain how some plants are adapted for achieving pollination through wind.
How *Vallisneria* and seagrasses achieve pollination?
28. a) Draw a neat labeled diagram of sectional view of seminiferous tubule(3).
b) Differentiate between spermatogenesis and spermiogenesis (2).
29. What is infertility? How infertility is treated by assisted reproductive technologies like IVF-ET and ZIFT?
30. What are the salient features of double helical structure of DNA?
31. Explain Messelson and Stahl's experiment which proved that DNA replicates semi-conservatively.
32. Discuss the contribution of Sutton and Boveri by making a comparison between the behavior of chromosomes and genes during meiosis, to explain Mendel's Laws.

Section-II

Answer any THREE of the following questions in 200-250 words each, wherever applicable. 3x5=15

33. Explain how green revolution in India was achieved by developing high yielding varieties of Rice, wheat, sugarcane and millets. What was the aim behind developing the cow pea variety, "pusa comal"?
35. "Genetically modified plants can reduce the use of chemical pesticides". Justify the statement. Write a note each on *Bt* toxin and *Bt* cotton.
34. a) Describe the roles of: i) Microbes in biogas production (2)
ii) Mycorrhiza as biofertilizer (2)
b) Name a free-living bacterium that is used as biofertilizer (1).
36. a) Explain how Mediterranean orchid achieve pollination. (2)
b) Draw a graph showing biome distribution with respect to annual temperature and precipitation. (3)
37. Describe the participation of people in the conservation of forests in India by taking Bishnoi community incident and Chipko movement as examples. Add a note on Joint Forest Management.