



JAIN COLLEGE, JAYANAGAR
II PUC - Mock Paper - I
Subject - BIOLOGY

Time: 3.15 hours

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-1 and Section-II.**
- ii) All the parts are compulsory.**
- iii) Draw the 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. "Autogamy does not occur in pistillate flowers". Justify your answer.
2. Why are Western ghats considered as one of the biodiversity hotspots?
3. Ozone layer in the stratosphere becomes thinner due to the release of CFCs. Give a scientific reason for this.
4. Name the most commonly used natural vector for cloning genes in plants.
5. Why do holes appear in fermented products like Swiss cheese?
6. Why is RNA splicing necessary in eukaryotes?
7. Write the name of the ship in which Charles Darwin made his sea voyage.
8. Define variation.
9. What is induced abortion technically known as?
10. LH peak level is seen during the menstrual mid-cycle. Why?

PART -B

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

5x2=10

11. a) What is resource partitioning?
b) Why does Ophrys show "sexual deceit"?
12. What happens if there is a continuous inbreeding? Discuss the strategy to overcome the problem associated with continuous inbreeding.
13. Who proposed central dogma? Represent central dogma.
14. Briefly explain the 2 surgical methods of sterilization.
15. What factors are responsible for fluctuation of population growth?
16. Draw neat labelled diagram of dicot embryo.
17. Define: a) Linkage b) Recombination.
18. Explain antibiotic resistance observed in bacteria in light of Darwinian selection theory

PART -C

Answer any FIVE of the following questions in 40-80 words each, wherever applicable:

5x3=15

19. What are IUDs? How are they useful?
20. Mendel's work was not recognized. Give reasons.
21. What are age pyramids? Show diagrammatic representation of different age pyramids for human population.
22. a) What is Allen's Rule?
b) Draw a neat schematic representation of population growth.

(1+2)

23. a) What are pollen banks?
 b) Zona pellucida plays an important role during fertilization. How?
 c) What is senescence?
24. Write a brief note on productivity.
25. What is HGP? Mention its goals and function.
26. a) What is pleiotrophy?
 b) Write short note on colour blindness.

PART -D

Section I

Answer any FOUR of the following questions in 200-300 words each, wherever applicable: 4x5=20

27. a) Differentiate between true and false fruits with examples
 b) What is Scutellum?
 c) What is the significance of Scrotum?
 d) What is MTP? (2+1+1+1)
28. a) A child has blood group 'O'. If the father has blood group 'A' and mother has blood group 'B'.
 What are the genotypes of parents and what are the possible genotypes of other offsprings.
 b) Differentiate between dominant trait and recessive trait.
 c) Briefly mention the contribution of T.H.MORGAN in genetics (2+1+2)
29. a) Differentiate between polycistronic and monocistronic structural gene.
 b) Explain GRIFFITH experiment. How did Avery, Macleod and McCarty prove the biochemical nature of transforming principle? (2+3)
30. a) Explain Big bang theory to explain origin of universe.
 b) List the 3 connotations of special creation theory. (2+3)
31. Give an account of applications of biotechnology in agriculture.
32. Draw a neat labelled diagram of sectional view of Mammary gland and explain.

Section II

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

33. Draw neat labelled diagrams of a) Binary fission in amoeba b) Human male reproductive system.
34. What is translation? explain the steps in detail
35. a) Define a sere. (1+4)
 b) What is hydrarch succession? Mention successive seral stages in hydrarch succession in plants.
36. Describe species area relationship with a suitable diagram.
37. a) What are lymphoid organs? Describe the types of lymphoid organs with example for each.
 b) Draw the chemical structure of Morphine.
 c) Draw the Skeletal structure of cannabinoid molecule. (3+1+1)
