



JAIN COLLEGE, JAYANAGAR
II PUC - Mock Paper - II
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:

10×1=10

1. Define ecological niche.
2. Name a non steroidal oral contraceptive for females.
3. Name the plant that has an estimated seed dormancy of 10,000 years.
4. Name the pathogen that causes filariasis.
5. Which enzyme is called severo ochoa enzyme?
6. Name the first amphibians that were ancestors of modern day frogs and salamanders.
7. Mention the significance of gel electrophoresis in R-DNA technology.
8. Seeds of orange show many embryos. Why?
9. What are multiple alleles?
10. Name any 2 major biomes of India.

PART -B

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

5×2=10

11. a) Differentiate between exonucleases and endonucleases.
b) Mention the function of restriction endonucleases.
12. a) Name any two drugs which are used in curing mental illness.
b) What is the use of morphine?
13. Draw a neat labeled diagram of pBR322.
14. a) What is the significance of earth and world summit?
b) State the significance of Ganga and Yamuna action plan.
15. Differentiate between :a) syncarpous and apocarpous condition. b) Spermiogenesis and spermiation.
16. Draw a neat labeled diagram of sparged stirred bio reactor.
17. What is bio informatics? Write its significance with respect to HGP.
18. i) Calculate the birth rate of *Paramecium* per day using the following data;
a) Day one- 800 individuals b) Day two -1400 individuals
ii) Why is Stellar's sea cow extinct?

PART -C

Answer any FIVE of the following questions in 40-80 words each, wherever applicable: 5×3=15

19. List out the adaptations of flowers for wind pollination.
20. Write a brief note on genetically engineered insulin.
21. The tropical latitudes have remained relatively undisturbed for many years. Explain.
22. a) What are catalytic converters? Mention its significance.
b) Why were Delhi buses made to operate on CNG in 2002?
23. a) What is vegetative propagation?
b) What are the main goals of RCH programme?
24. Explain polygenic inheritance with an example.
25. Briefly write the process of cleavage of the zygote till implantation.
26. Explain the selection of dark winged moths in response to industrial revolution in England to illustrate the theory of natural selection.

PART -D

Section I

Answer any FOUR of the following questions in 200-300 words each, wherever applicable: 4×5=20

27. Schematically represent oogenesis and explain.
28. What is greenhouse effect? Elaborate on the causes, effects and methods of control of global warming.
29. What is regulation of gene expression? Explain with respect to Lac operon.
30. Draw and explain the stages of embryo development in dicot.
31. What are transgenic animals? Describe the various benefits of transgenic animals.
32. a) Explain adaptive radiation with an example of Australian marsupial.
b) Differentiate between divergent and convergent evolution.
c) Explain the structure of polynucleotide chain.

Section II

Answer any THREE of the following questions in 200-250 words each, wherever applicable: 3×5=15

33. Explain the various abiotic factors that affect the organisms surviving in a given habitat.
34. Write a note on the case study of people's participation in conservation of forests.
35. Draw a diagrammatic sectional view of mammalian ovary and explain.
36. Comment on: a) Thalassaemia b) Differentiate between transcription and translation. (3+2)
37. a) Name the organisms from which we obtain the following products and state its use
A) Statins. B) cyclosporin A. C) Streptokinase.
b) Explain the commercial role of lipase and pectinases produced by microbes.
