JAIN COLLEGE, JAYANAGAR
II PUC Mock Paper -II
Subject : Biology (36)

Duration: 3 hrs 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-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 o*ne* word or *one* sentence each: 10x1=10

1. Define parthenocarpy.
2. What is menarche?
3. Name the naturalist who drew the same conclusion as that of Darwin.
4. What is JFM meant for?
5. Define standing state.
6. What are multiple alleles?
7. Name the heterogametes in sexually reproducing organisms.
8. Name the plant from which cocaine is obtained.
9. Name the two basic amino acids that enable histones to acquire positive charge.
10. State Gause's competitive exclusion principle.

Part-B

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

11. List the four basic tenets of Lamarckism.
12. Differentiate between co-evolution and co-existence with examples.
13. Write short note on VNTR.
14. Write the special features of wind pollinated flowers.
15. State the ill effects of alcohol abuse.
16. Write the karyotype of Klinefelter's syndrome and mention any 2 symptoms of the same. **(1+1)**
17. Write a short note on Bioethics.
18. Expand: a) MMR b) IUD c) hPL d) RCH **(1/2 ×4=2)**

Part-C

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

19. What are the 3 major types of RNA's? Mention their function s with respect to protein synthesis. (1 ½ +1 ½)
20. a) What are ecological pyramids?
    b) Explain with examples any 2 types of pyramids. **(1+2)**
21. Name the reproductive propogules of a) *Penicillium* b) *Chlamydomonas* c) *Amorphophallus*
22. Explain Pleiotropy with an example.
23. Biodiversity can be understood at various levels. Explain.

24. a) What is binary fission? Schematically represent it.
    b) Bagging is necessary during artificial breeding techniques. Why? **(2+1)**
25. Name the interactions:
    a) Egret & grazing cattle
    b) *Cuscuta* & hedge plants
    c) *Balanus* and *Chathamalus* **(1+1+1)**
26. Write the function of :
    a) Acrosome
    b) Fimbriae
    c) Corpus luteum **(1+1+1)**

Part- D

Section-I

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

27. Explain different stages during the evolution of man.
28. a) Which kind of growth pattern best explains the population in an environment? Explain.
    b) Give 2 examples of physiological adaptation in animals. **(3+2)**
29. a) What is gene regulation?
    b) Explain the regulation of Lac operon. **(1+4)**
30. Explain double fertilization with the help of neat labelled diagrams.
31. Explain the process of fertilization to implantation with neat labelled diagrams.
32. Briefly explain the following:
    a) Allergy
    b) Autoimmunity
    c) Passive immunization **(2+2+1)**

Section-II

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

33. a) Innate immunity is said to be first line of defense. Explain.
    b) Name a physical and biological carcinogen.
34. Organisms are exposed to unfavorable conditions. How do they respond to such conditions? Explain.
35. Explain Mendel's law of independent assortment.
36. Draw a neat labelled diagram of human mammary gland and explain.
37. Explain Stanley-Miller experiment. What did this experiment prove / conclude?

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