JAIN COLLEGE, Bangalore
Mock Paper – 1, January - 2016
II PUC – Biology (36)

Time: 3 Hours 15 Minutes **Max. Marks: 70**

I. Answer the following questions in one word or one sentence each: 10 × 1 = 10

1 Why is pyramid of energy always upright?
2 Ozone layer in the stratosphere becomes thinner due to release of CFC's. Give a scientific reason for this?
3 Why eukaryotic genes are called split genes?
4 Write the binomial name of the organism that causes Filariasis.
5 Define implantation of the embryo.
6 What is biomagnification?
7 People living at high altitudes have high haemoglobin content. Give reasons.
8 Genetic code is degenerate. Give reason.
9 Why do holes appear in fermented products like Swiss Cheese?
10 Define Moriculture.

II. Answer any five of the following questions in about 3-5 sentences each wherever applicable. 5 × 2 = 10

11. Write a note on coextinction.
12. What are hermaphrodites? Give two examples.
13. Unless foetal ejection reflex is produced normal parturition does not occur. Substantiate the statement.
14. Mention the function of DNA polymerase I and II in eukaryotes.
15. What are homologous and analogous organs?
16. What is xenogamy? Mention its importance.
17. What is cell mediated immunity?
18. Why diverse ecosystems are more productive?

III. Answer any five of the following questions in about 40-80 words each wherever applicable. 5× 3 = 15

19. a What is endosperm? b. Differentiate between free nuclear and cellular endosperm with examples.
20. Write short notes on PKU.
21. Define the following population attribute.a. Population density b.. Sex ratio c. Natality.
22. Define Apiculture. Mention two benefits and any two factors to be considered for successful Bee keeping.
23. Discuss any three evidences in support of Organic evolution.
24. Write note on a case study of remedy for Plastic wastes.
25. What is artificial hybridisation? Explain emasculation and bagging techniques used in artificial hybridisation for crop improvement programme.

IV Answer any four of the following questions in 200-250 words each, wherever applicable. 4 × 5 = 20

26. What is global warming? Mention its causes, effects and control measures.
27. State and explain Mendel's Law of Segregation in pea plants.
28. What is Oogenesis? Describe with a schematic representation.
29. With a neat labelled diagram explain the structure of a typical anatropous ovule.
30. Describe the role of microbes in production of Biofertilisers.
31. a. Define Tissue culture b.What are explants? Which part of the plant would you select as explants to produce virus free plants c. What is somatic hybridisation? Give an example.

32. What is nutrient cycling? Explain the types of biogeochemical cycle mentioning an example for each.

V Answer any three of the following in about 200-250 words each wherever applicable:

3 × 5 = 15

33. Distinguish between the following: a. Euchromatin and Heterochromatin b. Repetitive and Satellite DNA.
34. a What are radioactive wastes? Mention how they are disposed b. Write short notes on e-wastes.
35. a Distinguish between Vaccinization and Immunisation? b. What are two types of antibodies produced in our body? c. What is immunity? Mention the pathogen and any two symptoms of common cold.
36. Describe the mechanism of protein systhesis in Prokaryotes.
37. Describe the modification in the following with examples:
    a. Tuber
    b. Phylloclade.
    c. Offset
    d. Runner
    e. Pneumatophores.

JAIN COLLEGE, Bangalore
Mock Paper – 2, January - 2016
II PUC – Biology (36)

Time: 3 Hours 15 Minutes **Max. Marks: 70**

I. Answer the following questions in one word or one sentence each: 10 × 1 = 10

1. What is polyembryony?
2. How is scared groove important in conservation of biodiversity?
3. What are statins?
4. Structural genes in prokaryotes are called polycistronic . Why?
5. What is convergent evolution?
6. Define Apiculture?
7. Define Operon.
8. Why breast feeding is recommended during initial stage of infant growth?
9. Name the pathogen that causes Amoebiasis.
10. Some animals if unable to migrate might avoid the stress by escaping in time. Justify with an example.

II. Answer any five of the following questions in about 3-5 sentences each wherever applicable. 5 × 2 = 10

11. Differentiate between incomplete dominance and co dominance.
12. Draw a neat labelled diagram of an antibody molecule.
13. With respect to tissue culture , what is totipotency and Somatic hybridization.
14. What is Xenogamy? Mention its importance.
15. Define Linkage. Who discovered Sex Linked inheritance in Drosophila?
16. What is DNA polymorphism? Mention its significance.
17. Define Gene pool and Genetic drift.
18. Define the terms- Food web and Secondary productivity.

III. Answer any five of the following questions in about 40-80 words each wherever applicable. 5 × 3 = 15

19. What are palindromic sequences? Discuss the mechanism of action of restriction endonucleases with a shcematic representation.
20. Explain why Tropical regions show greater levels of Biodiversity.
21. Define Human plaenta. Mention its functions.
22. What is animal husbandry? Mention any two differences between inbreeding and outbreeding.
23. What is RNA interference? Explain how this novel technique is exploited in agriculture to protect tobacco plants from the infection of nematode Meloidegyne.incognitha.
24. What is innate immunity? Write notes on it.
25. What kind of reproduction is seen in the following organisms: Penicillium, Chlamydomonas and Sponges?

IV. Answer any four of the following questions in 200-250 words each, wherever applicable. 4 × 5 = 20

26. Describe the cause and features in Klinefelter's syndrome and Down's syndrome.
27. Draw a. sketch of T.S of Mammalian testis. b. What are Leydig cells. Mention their function.
28. What is DNA figure printing? Explain the steps involved in the same.
29. Distinguish between spermatogenesis and oogenesis.
30. a. Differentiate template and coding strand of DNA. b. DNA is a better genetic material, justify.
31. With a neat labelled diagram explain the structure of a T.S of young anther.
32. What are sexually transmitted diseases? Mention the cause and symptoms of Gonorrhoea and Syphilis.

V. Answer any three of the following in about 200-250 words each wherever applicable:

3 × 5 = 15

33. Define nucleosome. Explain with a diagram the structure of nucleosome and comment on how DNA helix is packed in the nucleus.
34. Explain the selection of Dark winged moths in response to Industrial Revolution in England to illustrate the theory of Natural Selection as proposed by Darwin.
35. Define Fishery. Mention any two fresh water and Marine water food fishes and add a note on economic importance of fishery.
36. What are Lymphoid organs? Describe the types of Lymphoid organs with an example for each.
37. What are ecological pyramids? Explain any two types with diagrammatic representation.