



JAIN COLLEGE, Bangalore
Mock Paper – 1, January - 2017
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. What are Coacervates?
 6. Define implantation of embryo.
 7. Why do holes appear in fermented products like Swiss Cheese?
 8. Define Apiculture.
 9. What is Bioprospecting?
 10. Genetic code is non ambiguous, give reasons.
- II. Answer any five of the following questions in about 3-5 sentences each wherever applicable. 5 × 2 = 10**
11. Write a note on Co-extinction.
 12. What are hermaphrodites? Give two examples.
 13. Unless foetal ejection reflex is produced normal parturition does not occur. Substantiate the statement.
 14. Explain haplo-diploid method of sex determination in honey bees.
 15. What are homologous and analogous organs?
 16. What is passive immunization? Give an example.
 17. Draw and label t-RNA molecule.
 18. What is xenogamy? Mention its importance.
- III. Answer any five of the following questions in about 40-80 words each wherever applicable. 5 × 3 = 15**
19. Write short note on sickle cell anemia.
 20. Define the following population attributes: a. Population density b. Sex ratio c. Natality.
 21. Distinguish between active and passive immunity with suitable examples.
 22. Explain the following terms: a. Genetic drift. b. Gene pool. c. Gene frequency.
 23. Write notes on common cold.
 24. a. What is endosperm?
b. Differentiate between free nuclear and cellular endosperm with examples. (1+2)
 25. Write a note on case study of remedy for plastic wastes.
 26. What is artificial hybridization? Explain emasculation and bagging techniques used in artificial hybridization for crop improvement program.
- IV Answer any four of the following questions in 200-250 words each, wherever applicable. 4 × 5 = 20**
27. What is global warming? Mention the causes, effects and control measures.
 28. State and explain Mendel's Law of segregation in pea plants.
 29. What is Oogenesis? Describe with a schematic representation.

30. Explain the semi conservative mechanism of DNA replication.
31. Discuss the role of microbes in the production of biofertilisers.
32. With a neat labeled diagram ,describe the structure of typical anatropus ovule.

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

3 × 5 = 15

33. What are radio active wastes? Mention how they are disposed. Write short notes on e- waste.
34. Distinguish between the following: a) Euchromatin and Heterochromatin b) Repetitive DNA and Satellite DNA.
35. Define DNA finger printing. Explain the various steps involved in it.
36. What is drug abuse? Describe with suitable examples of drugs that are commonly abused.
37. a. Define Cancer?
 - b. Mention any four characters of cancer cells.
 - c. Distinguish between Benign and malignant tumours. (1+2+2)



JAIN COLLEGE, Bangalore
Mock Paper – 2, January - 2017
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 ovulation?
 2. Name the type of pollination that brings genetically different types of pollen to the stigma.
 3. What is the proportion of double recessive offspring in the F₂ generation in a Mendelian dihybrid cross?
 4. Mention the role of LH during spermatogenesis.
 5. Name the causative organism of common cold.
 6. What is Mutualism?
 7. What is reforestation?
 8. "Gel electrophoresis is considered as a very important technique in recombinant DNA technology." Why?
 9. Which genetic disease is characterized by the reduced synthesis of mutant haemoglobin.?
 10. How cryopreservation helps in the conservation of biodiversity?
- II. Answer any five of the following questions in about 3-5 sentences each wherever applicable. 5 × 2 = 10**
11. Give reasons for the following:
 - a) Compared to internal fertilization, the external fertilization is disadvantageous to the animal.
 - b) Chances of survival of youngones are more in viviparous animals than in oviparous animals.
 12. Draw a neat labeled diagram of plasmid P^{Br}₃₂₂.
 13. Differentiate between Gametogenesis and Embryogenesis.
 14. Darwin's finches represent one of the best examples for adaptive radiation comment.
 15. Draw a neat labeled diagram of an antibody molecule.
 16. Write a note on Predation.
 17. What are hotspots? Give two examples.
 18. Differentiate between inbreeding and out breeding.
- III. Answer any five of the following questions in about 40-80 words each wherever applicable. 5 × 3 = 15**
19. Name the following:
 - a) The type of reproductive cycle in non primate mammals.
 - b) The plant that flowers once in its life time.
 - c) The organism in which cell division itself is a mode of reproduction.
 20. Describe rivet popper hypothesis.
 21. Briefly explain the structure of pollen grain?
 22. List the period, brain capacity and probable food of the *Homo erectus* stage in the human evolution.
 23. Mention the causes and effects of Phenylketonuria.
 24. Mention the important points needed for successful beekeeping.
 25. Enumerate the differences between B & T – lymphocytes.
 26. Explain the following terms:
 - a) Stenothermal organisms
 - b) Eury halines
 - c) sex ratio
- IV. Answer any four of the following questions in 200-250 words each, wherever applicable. 4 × 5 = 20**
27. Draw a neat labeled diagram of human sperm.
 28. Describe the outbreeding devices that prevent autogamy?
 29. Draw a neat labeled diagram of retrovirus (HIV) lifecycle.

30. What are the views of Charles Darwin about the evolution of life forms.
31. Mention the steps in DNA finger printing?
32. With the help of suitable diagrams, explain the process of transcription in bacteria.

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

3 × 5 = 15

33. Describe the Evil quartet responsible for the loss of biodiversity.
34. Describe briefly the steps involved in the breeding of new genetic variety of crops.
35. a) Explain how DNA is isolated from the cells.
b) Differentiate between exonucleases and endonucleases.
c) What is the uniqueness of Taq polymerase. (2+2+1)
36. How RNA interference prevents nematode infestation in tobacco plants?
37. a) Explain Electrostatic precipitator with a neat labeled diagram.
b) Write a note on catalytic converter. (3+2)
