



# JAIN COLLEGE

463/465, 18th Main Road, SS Royal, 80 Feet Road, Rajarajeshwari Nagar,  
Bangalore - 560 098

**Date:**

**SUBJECT: BIOLOGY**

**II PUC  
MOCK-II**

**Timings Allowed: 3 Hrs 15 Minutes**

**Total Marks: 70**

**GENERAL INSTRUCTIONS:**

- **ALL PARTS ARE COMPULSORY.**
- **MENTION CORRECT MAIN AND QUESTION NUMBERS.**
- **DRAW DIAGRAMS WHEREVER NECESSARY. UNLABELLED DIAGRAMS DO NOT ATTRACT ANY MARKS.**

**I. ANSWER THE FOLLOWING IN ONE WORD OR ONE SENTENCE EACH: 1X10=10**

1. Define oestrus cycle.
2. Name the most commonly used natural vector for cloning genes in plants.
3. What is vegetative propagation?
4. Why eukaryotic genes are called 'split genes'?
5. In which food chain does dead organic matter occupy the base?
6. What are meiocytes?
7. Name the pathogen that causes amoebiasis.
8. Mention the significance of gel-electrophoresis in genetic engineering.
9. What is drug addiction?
10. Why is primitive earth's condition 'reducing'?

**II. ANSWER ANY FIVE OF THE FOLLOWING IN ABOUT 3-5 SENTENCES EACH: 5X2=10**

11. What is plant breeding? Mention its objectives.
12. Why are diverse ecosystems more productive?
13. Draw a neat labelled diagram of a Stirred-tank bioreactor.
14. What are false fruits? Give examples.
15. What are analogous hormones? Give examples.
16. Define:
  - a. Food web
  - b. Secondary productivity
17. What is tumour? Mention the different types of tumours?
18. What are palindromic nucleotide sequences? Mention any two enzymes which recognise such sequences in DNA.

**III. ANSWER ANY FIVE OF THE FOLLOWING IN ABOUT 40-80 WORDS EACH: 5X3=15**

19. What is test cross? Explain with respect to monohybrid cross.
20. Define contraceptive? Mention any two important quantities of a good contraceptive.
21. Expand GMO. Write any four uses of it.
22. Name the following:
  - a. The more man-like primate who walked like Gorilla
  - b. The primate who lived in east African Grassland
  - c. The primate who lived in east and central Asia between 1,00,000 to 40,000 years back

23. Write a note on *Cry* proteins. Give two examples of genetically modified Bt-crops.

**24. Give reasons:**

- a. AB blood group of man shows co-dominance.
- b. Pyramid of energy is always upright.
- c. tRNA is known as adapter molecule.

**25. Answer:**

- a. What are hermaphrodites? Mention one example [2]
- b. Offspring of asexual reproduction are called clones. Why? [1]

26. Briefly describe the process of double fertilisation.

**IV. ANSWER ANY FOUR OF THE FOLLOWING IN ABOUT 200-250 WORDS EACH: 4X5=20**

27. With a neat labelled diagram describe the structure of human sperm.

28. Describe the process of translation.

29. Give an account of applications of biotechnology in agriculture.

30. What is operon? Describe how lac operon is switched on and off with a schematic representation.

31. Define breed. Describe different methods of animal breeding and mention their significance.

32. (a) State Mendel's law of independent assortment [1]

(b) Define: {i} Gene pool {ii} Homozygous condition {iii} Parturition {iv} Allergy

**V. ANSWER ANY THREE OF THE FOLLOWING IN ABOUT 200- 250 WORDS EACH: 3X5=15**

33. With a neat labelled diagram explain the structure of T.S. of a mature anther.

34. What is DNA fingerprinting? How does DNA fingerprinting help in solving forensic cases?

35. What is sewage? Describe Sewage treatment with the help of microorganisms.

36. (a) What is organic farming? [1]

(b) Mention the major sources of bio fertilizers [2]

(c) What is bio control? Give any two examples [2]

37. Explain Bt-Cotton and write a note on the effects and significance of Bt- toxin.

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