

COURSE : MAJOR – CORE
PAPER : BIOTECHNOLOGY
TIME : 3 HOURS **MAX. MARKS : 100**

I. CHOOSE THE CORRECT ANSWER: (5 x 1 = 5)

- II. FILL IN THE BLANKS:** (5 x 1 = 5)

- III. DEFINE IN 1 OR 2 SENTENCES** (10 x 1 = 10)

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SECTION - B

Answer any FOUR of the following; each answers not exceeding 500 words. Draw diagram wherever necessary. **4x10=40**

16. What are the features of a good vector? Briefly describe the features of PBR 322.
17. Define cosmids: Briefly describe its features for construction of genomic libraries.
18. Explain the PCR procedure under the following heads: i) PCR primers
ii) PCR efficiency iii) annealing temperature and iv) amplicon size.
19. List the various types of genetic markers? Give a brief description of RFLP markers and discuss their application.
20. Give a brief account on DNA sequencing methods.
21. Briefly describe the strategies for generating herbicide resistant transgenic plants.
22. Discuss on the gene therapy techniques on modern medicine.

SECTION - C

Answer any TWO of the following, each answer not exceeding 1200 words. Draw diagram wherever necessary. **2x20=40**

23. Briefly describe the different kinds of vectors available for yeast and discuss their advantages and limitations.
24. List the various variations of the PCR procedure and briefly describe the methods and applications of them.
25. Briefly describe the aims, strategies and achievements of the human genome project.
26. Describe the production of insect resistance transgenic plants under the following heads (i) cry proteins of *B. thuringiensis*, (ii) insect resistance in plants due to cry genes. (iii) truncated and modified cry genes, and (iv) other transgenes for insect resistance.
