

(FOR THE CANDIDATES ADMITTED
DURING THE ACADEMIC YEAR 2023

23UZY508

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : NOVEMBER - 2025

B.Sc.ZOOLOGY(AIDED)

MAXIMUM MARKS: 75

SEMESTER - V

TIME : 3 HOURS

PART - III

23UZY508- BIOTECHNOLOGY

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. Which of the following feature is NOT present in pBR322?
a) Origin of replication b) Multiple cloning site
c) Selectable markers d) Restriction sites within marker genes
2. The following method is used to detect hybridized probe in Southern blotting_____
a) Western blotting b) Spectrophotometry c) Gel electrophoresis d) Autoradiography
3. Why is gold preferred over tungsten in some biolistic protocols?
a) Gold is non-toxic and chemically inert b) Gold is lighter and more reactive
c) Gold particles are magnetic d) Gold particles dissolve easily in water
4. Which of the following chemically defined media suitable to grow mammalian cells and chicken cells?
a) LB medium b) PDA medium c) Fischer's medium d) L 15 medium
5. Copyright is administrated by_____
a) Ministry of Commerce and Industry
b) Department of Industrial Policy and Promotion
c) Ministry of Human Resource and Development
d) Ministry of Communication and Information Technology

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

(K2)

6. What is red biotechnology?
7. State one major difference between a genomic library and a cDNA library.
8. What is meant by super ovulation?
9. Define gnotobiotic animal.
10. Define biological containment.

SECTION – B

(5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K3)

11. a) Explain why transposons are termed as 'jumping genes' with justification.
(OR)

b) Describe the steps involved in the production of a recombinant vaccine.

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(CONTD 2)

12. a) Compare and contrast Western blotting with Southern and Northern blotting.
(OR)
b) List the steps involved in the screening of DNA library.
13. a) Differentiate between primary and secondary cell lines.
(OR)
b) Elucidate the steps involved in making transgenic mice through microinjection method.
14. a) Highlight the techniques involved in isolation and culture of explants.
(OR)
b) Narrate the applications of Nano – biotechnology with reference to genetic engineering.
15. a) Comment on the Cartagena Protocol on Biosafety and its relevance to GMO's.
(OR)
b) State and explain the legislation covering IPRs in India and their administrations.

SECTION – C**(5 X 8 = 40 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K4 (Or) K5)**

16. a) Describe how pBR322 is used as a cloning vector in genetic engineering.
(OR)
b) Explain the steps involved in the construction of recombinant DNA.
17. a) Illustrate the working principle and applications of Polymerase Chain Reaction.
(OR)
b) Elaborate the methodology of DNA fingerprinting and its applications.
18. a) “Transgenic animals are a boon to mankind” – Justify the statement.
(OR)
b) Elucidate the steps involved in the evolution of cell line from secondary cell culture.
19. a) Discuss how bovine growth hormone is produced by using porcine bioreactor.
(OR)
b) Describe the essential requirements and components of culture media used in animal tissue culture.
20. a) Expound the ethical responsibilities and regulations associated with the keeping and care of transgenic animals in research.
(OR)
b) Discuss the process and legal requirements for obtaining a patent for a biotechnological product in India.

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