(6 pages) **Reg. No. :**.....

Code No. : 10036 E **Sub. Code : CMZO 62**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2025.

Sixth Semester

Zoology – Core

Major – ANIMAL BIOTECHNOLOGY

(For those who joined in July 2021 and 2022 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The circular double stranded extra chromosomal DNA is called

   (a) Plasmids (b) RNA

   (c) rDNA (d) Phage DNA

2. Ampicilin Resistance gene is present in

   (a) CaMv (b) SV4O

   (c) pBR322 (d) Cosmid

3. Amplification of DNA fragment can be done by

   (a) RAPD

   (b) RFLP

   (c) PCR

   (d) DNA finger Printing

4. The blotting technique used to separate DNA

   (a) Northern blotting

   (b) Southern blotting

   (c) Western blotting

   (d) Both (a) and (b)

5. Monoclonal antibodies are produced by the technique

   (a) Blotting (b) Finger printing

   (c) Ligation (d) Hybridoma

6. The pH of cell culture medium is

   (a) 7 – 7.3 (b) 4 – 5

   (c) 5 – 6 (d) 8 – 9

7. Long time storage of animal cells at super freeze temperature is called

(a) Cell culture

(b) Cell cloning

(c) Cryo preservation

(d) Polymerization

8. Cut ends of DNA are joined by the enzyme

(a) DNA ligase

(b) Ribozyme

(c) Restriction endonuclease

(d) Klenow enzyme

9. The treatment of genetic diseases by injecting suitable DNA is called

(a) Gene splicing (b) Gene therapy

(c) Finger printing (d) Gene cloning

10. Oil degrading super bug is created from

(a) Salmonella (b) Pseudomonas

(c) Ersenia (d) Nitrobacter

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Describe the structure of Lambda phage.

Or

(b) Explain blue white selection of recombinant DNA.

12. (a) Write notes on DNA library.

Or

(b) Describe the steps involved in PCR.

13. (a) Illustrate cloning of Dolly.

Or

(b) Write down embryonic stem cell culture.

14. (a) Describe the steps involved in cryopreservation.

Or

(b) Write an account on immobilization of enzymes.

15. (a) Write short notes on Bio-weapons.

Or

(b) Explain the process of transgenesis in mice.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe pBR322 as a cloning vector.

Or

(b) Enumerate the methods to select recombinant cells.

17. (a) Summarise the steps involved in RAPD.

Or

(b) Describe Northern blotting technique.

18. (a) Describe the production of monoclonal antibodies.

Or

(b) Write an essay on animal cloning.

19. (a) Explain the commercial production of Insulin.

Or

(b) Discuss the working principle of Biosensors and its application.

20. (a) Describe super bug and its application.

Or

(b) Enumerate the production of Biogas.

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