

(6 pages)

Reg. No. :

Code No. : 6432

Sub. Code : ZZOM 32

M.Sc.(CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Zoology

ANIMAL BIOTECHNOLOGY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Polymerase used for PCR is extracted from

- (a) Homo sapiens
- (b) Thermus aquaticus
- (c) Escherichia coli
- (d) Saccharomyces cerevisiae

2. How many bases does the sequence which identifies the restriction enzymes contain?

- (a) 1
- (b) 4
- (c) 6
- (d) 12

3. Which of the following ions are required for the activity of Type II restriction?

- (a) Ca^{2+}
- (b) Mg^{2+}
- (c) Cl^{2+}
- (d) Mn^{2+}

4. Which of the following is the most common source of SCP?

- (a) Multicellular yeast
- (b) Single-celled yeast
- (c) Unicellular algae
- (d) Unicellular bacteria

5. Organisms associated with sorghum and cotton which provide nutrition to them are

- (a) Azospirillum, Azotobacter
- (b) Azotobacter, Azospirillum
- (c) Anabaena, Rhizobium
- (d) Rhizobium, Anabaena



6. In which of the following method, the enzyme is bound to a suitable adsorbent material rendering it immobile?
- (a) Adsorption
 - (b) Covalent binding
 - (c) Entrapment
 - (d) Membrane confinement
7. In 1990 the first gene therapy was given to treat which deficiency?
- (a) Smallpox
 - (b) Vitamin E deficiency
 - (c) Diabetes
 - (d) Adenosine deaminase
8. Chromatography technique is used in which stage of downstream processing
- (a) solid liquid separation
 - (b) concentration
 - (c) purification
 - (d) formulation

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9. The bioremediation process involving the usage of plants to degrade pollutants is
- (a) Composting
 - (b) Biopile
 - (c) Phytoremediation
 - (d) Land farming
10. Which of the following organisms used for treating oil spills?
- (a) *Thiobacillus novellus*
 - (b) *Escherichia coli*
 - (c) *Staphylococcus aureus*
 - (d) *Pseudomonas putida*

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Classify the enzymes modification.
- Or
- (b) Explain the basic steps of gene cloning.
12. (a) Define Plasmids and explain the PBR322.
- Or
- (b) Describe about the liposome fusion and its advantages.

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13. (a) Explain about the microbial leaching.

Or

- (b) Narrate the applications of enzymes in various field.

14. (a) Describe the microbial production of tissue plasminogen activator.

Or

- (b) Explain the DNA fingerprinting and its uses.

15. (a) Classify about the Biogas production.

Or

- (b) Summaries the account on phytoremediation

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Detailed account on chemical synthesis of oligonucleotides.

Or

- (b) Explain the restriction enzymes.

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17. (a) Enumerate the molecular markers.

Or

- (b) Write an essay about DNA libraries.

18. (a) Describe the Intellectual Property Rights.

Or

- (b) Detailed account on Biosensors and its types.

19. (a) Explain the Gene therapy with suitable example.

Or

- (b) Justify the application of biotechnology in vaccines with suitable examples.

20. (a) Enumerate the downstream processing in production.

Or

- (b) Discuss about the Biomining.

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