

Reg. No. :

Code No.: 5553

Sub. Code: ZMBM 43

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Microbiology – Core

BIOTECHNOLOGY

(For those who joined in July 2021-2023)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The sequence of DNA from where replication starts is called _____.
(a) selectable marker (b) origin of replication
(c) ter sequence (d) genetic sequence
2. The type of restriction enzymes used in rDNA technology is _____.
(a) Type I (b) Type II
(c) Type III (d) All of these
3. Viruses which infect bacteria are called _____.
(a) bacteria (b) archaea
(c) pUC (d) bacteriophages

4. The process by which a probe is used to screen a library is known as _____.
- Hybridization
 - Southern blotting
 - Colony hybridization
 - Western blotting
5. Biosensors measure glucose concentrations between which of the following ranges _____.
- 10-1 to 10-2 M
 - 10-2 to 10-4 M
 - 10-1 to 10-4 M
 - 10-1 to 10-7 M
6. Which one of the following biosensors is used for therapeutic applications?
- silicon biosensor
 - nanomaterials based biosensor
 - hydrogen based biosensor
 - none of the above
7. Biomass can be used to make _____.
- chemicals
 - fibres
 - transportation fuels
 - biochemical
8. Bio ethanol often known as _____.
- ethylene
 - methylated spirit
 - ethylene glycol
 - methylene
9. The removal or replacement of tumour causing genes from Ti plasmid is termed as
- gene replacement
 - disarming
 - insertional inactivation
 - gene displacement

10. 95% transgenic animals are _____.
- sheep
 - pigs
 - rabbits
 - micc

PART B — (5 × 5 = 25 marks)

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

11. (a) Show the basic tools and techniques of rDNA technology.
- Or
- (b) Prepare application of PCR.
12. (a) Justify the properties of vectors.
- Or
- (b) Recommend immunological assay.
13. (a) Analyze PHBV.
- Or
- (b) Assume the biosensors for nutrients.
14. (a) Apply biological process of anaerobic digestion.
- Or
- (b) Discuss composition of biomass.
15. (a) State that plant transformation.
- Or
- (b) Assume the development and uses of transgenic animals.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Classify types of restriction enzymes.

Or

(b) Assess isolation of nucleic acids.

17. (a) Determine the isolation of cloned genes.

Or

(b) Design the screening procedures of cloning strategies.

18. (a) Enumerate types of electrode system.

Or

(b) Create notes on biosensor for environmental control.

19. (a) Predict notes on sources of renewable energy.

Or

(b) Develop the notes on bioenergy products.

20. (a) Determine the notes on developing plant strains by genetic engineering.

Or

(b) Evaluate Intellectual property rights.