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No. :

Code No.: 20231 E Sub. Code: SMMI 63

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Microbiology – Core

MICROBIAL BIOTECHNOLOGY

(For those who joined in July 2017-2019)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions

Choose the correct answer :

1. Who coined the term Biotechnology?
 - (a) Karl Ereky
 - (b) Kary Mullis
 - (c) Jacod and Monad
 - (d) Sanger and Nicolson

6. Determination of the order of nucleotides of a DNA is called _____
 - (a) RNA Sequencing
 - (b) DNA Sequencing
 - (c) Protein Sequencing
 - (d) All the above
7. Ti plasmid is found in _____
 - (a) Agrobacterium
 - (b) E.coli
 - (c) Shigella
 - (d) Salmonella
8. An animal having the insert DNA in its genomic DNA is _____
 - (a) Transgenic plant
 - (b) Transgenic animal
 - (c) Translation
 - (d) Transposon
9. Insulin is produced by _____
 - (a) alpha cells
 - (b) beta cells
 - (c) mast cells
 - (d) none
10. Somatic cell therapy includes _____
 - (a) ex vivo therapy
 - (b) in vivo therapy
 - (c) antisense therapy
 - (d) all of these

2. _____ discovered the mold penicillium
 - (a) Alexander Fleming
 - (b) Anton Van Leeuwenhoek
 - (c) Louis Pasteur
 - (d) Robert Koch
3. Which enzyme acts on starch?
 - (a) Amylase
 - (b) Lipase
 - (c) Protease
 - (d) RNAses
4. Who discovered the restriction enzymes?
 - (a) Werner Arber
 - (b) Cohen and Boyer
 - (c) Boyer and Helling
 - (d) Maxam and Gilbert
5. _____ shared half of the 1980 Nobel Prize in chemistry for independently developing methods for the sequencing of DNA
 - (a) Frederick Sanger and Walter Gilbert
 - (b) Sanger and Watson
 - (c) Sanger and Crick
 - (d) Sanger and Jakson

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write notes on biotechnology.

Or

(b) Write a short note on application of biotechnology.
12. (a) Discuss about production of enzymes.

Or

(b) What is the process of DNA transformation?
13. (a) What is genomics and add a note on its applications?

Or

(b) Describe about shotgun sequencing.
14. (a) Explain in detail of monoclonal antibodies.

Or

(b) What is the importance of Ti plasmid in Biotechnology?

15. (a) What is recombinant vaccine? How it will be prepared?

Or

- (b) Discuss about 'Bt' transgenics.

PART C — (5 × 8 = 40 marks)

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

16. (a) Discuss in detail of definition and concept of Biotechnology?

Or

- (b) Write a detail notes on application of rDNA technology?

17. (a) Explain in detail of enzyme immobilization and its applications.

Or

- (b) Explain protein engineering and its importance.

18. (a) Describe in detail about Sanger's method of Gene sequencing.

Or

- (b) Write a detailed notes on Genomics and its applications.

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19. (a) Give notes on transgenic animal-mice and its application.

Or

- (b) How will you develop herbicide resistant plants?

20. (a) Describe about gene therapy and explain the types of gene therapy.

Or

- (b) What is insulin? How is insulin produced through biotechnology?
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