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Reg. No. : .....

Code No. : 10738 E

Sub. Code : JMMI 63

B.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2019.

Sixth Semester

Microbiology – Main

MICROBIAL BIOTECHNOLOGY

(For those who joined in July 2016 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. \_\_\_\_\_ discovered the mold *penicillium*.
  - (a) Alexander Fleming
  - (b) Anton Von Levan hock
  - (c) Louis Pasteur
  - (d) Robert Koch

2. \_\_\_\_\_ first used a pure microbiological culture in an industrial process.
- (a) Charles Darwin
  - (b) Chaim Weizmann
  - (c) Stanley N. Cohen
  - (d) Ananda Chakrabarty
3. Liposomes are composed of \_\_\_\_\_.
- (a) Indole
  - (b) Cellulose
  - (c) Phospholipids
  - (d) Skatole
4. \_\_\_\_\_ is plant growth hormone.
- (a) auxins
  - (b) somatocrinin
  - (c) clonidine
  - (d) glucagon
5. One gene affecting more than one trait is called \_\_\_\_\_.
- (a) epistasis
  - (b) pleiotropy
  - (c) heterosis
  - (d) none

6. \_\_\_\_\_ 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
7. The Ti plasmid is found in \_\_\_\_\_.
- (a) E. coli
  - (b) Agrobacterium
  - (c) Salmonella
  - (d) Shigella
8. \_\_\_\_\_ is called the 'natural genetic engineer'.
- (a) E. coli
  - (b) Azospirillum
  - (c) Azatobacter
  - (d) Agrobacterium
9. Insulin is produced by \_\_\_\_\_.
- (a) alpha cells
  - (b) beta cells
  - (c) mast cells
  - (d) none

10. Any DNA molecule that has the ability to replicate in an appropriate host cell, to which the desired genes are integrated for cloning, is called as \_\_\_\_\_.

- (a) plasmid                      (b) linker  
(c) vector                      (d) adapter

PART B — ( $5 \times 5 = 25$  marks)

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

Each answer should not exceed 250 words.

11. (a) What are some examples of Biotechnology?

Or

- (b) What are the effects of biotechnology?

12. (a) What is the process of transformation in DNA?

Or

- (b) Discuss about biolistic particle delivery system.

13. (a) What is genomics and its application?

Or

- (b) Write notes on discovery of DNA structure and function.



14. (a) What are monoclonal antibodies and how do they work?

Or

- (b) Why is the importance of Ti plasmid to Biotechnology?

15. (a) Write short notes on recombinant vaccine.

Or

- (b) Discuss about antisense molecules.

PART C — (5 × 8 = 40 marks)

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

16. (a) Write a detail notes on application of rDNA technology.

Or

- (b) Write an essay on History of Biotechnology.

17. (a) Write about Enzyme immobilization and its applications.

Or

- (b) Explain protein engineering and its importance.

18. (a) Write a detail notes on Sanger's method of DNA sequencing.

Or

- (b) Discuss about shotgun sequencing.

19. (a) Write an essay on Transgenic mice.

Or

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

20. (a) Write a detail notes on transgenic brinjal.

Or

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