

(6 pages)

**Reg. No. :** .....

**Code No. : 10738 E      Sub. Code : JMMI 63/  
SMMI 63**

B.Sc. (CBCS) DEGREE EXAMINATION,  
APRIL 2020.

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 the questions.

Choose the correct answer :

1. Who created the first r-DNA molecule?
  - (a) Nathan, Arber and Smith
  - (b) Watson, Crick and Wilkins
  - (c) Boyer and Cohen
  - (d) Paul Berg

2. PCR technique was invented by
  - (a) Karry Mullis
  - (b) Boyer
  - (c) Sanger
  - (d) Cohn
  
3. Biolistic transformation is ————— category of transformation.
  - (a) Physical
  - (b) Chemical
  - (c) Electroporation
  - (d) Natural
  
4. Which of the amino acid was produced by immobilized enzyme for the first time?
  - (a) L-amino acids
  - (b) D-amino acids
  - (c) D and L-amino acids
  - (d) None of the above
  
5. Fredrick Sanger won noble prize in 1958 for
  - (a) Discovery of Sanger's method
  - (b) Elucidating amino acid sequence of insulin
  - (c) Elucidating nucleotide sequence of insulin
  - (d) Elucidating nucleotide sequence of somatostatin
  
6. Ti (Tumor inducing) plasmid transforms
  - (a) Plants
  - (b) Animals
  - (c) Fungi
  - (d) Bacteria

7. The expression of a transgene in the target tissue is identified by a
- (a) Transgene
  - (b) Promoter
  - (c) Enhancer
  - (d) Reporter
8. Monoclonal antibodies are produced by
- (a) Germ cells
  - (b) Hybrid of carcinogen cell and bone cell
  - (c) Somatic cells
  - (d) Sarcoma cells
9. An example of gene therapy is \_\_\_\_\_.
- (a) production of test tube babies by artificial insemination and implantation of fertilized eggs
  - (b) production of injectable Hepatitis B vaccine
  - (c) production of vaccines in food crops like potatoes which can be eaten
  - (d) introduction of gene for adenosine deaminase in persons suffering from Severe Combined Immuno-Deficiency (SCID)
10. The vaccines prepared through recombinant DNA technology are
- (a) Third generation vaccines
  - (b) First generation vaccines
  - (c) Second generation vaccines
  - (d) None

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Give an account on significance of biotechnology.

Or

- (b) Describe the achievements of r-DNA technology.

12. (a) Explain micro infection method of gene transfer in bacteria.

Or

- (b) Give an account on significance of immobilization.

13. (a) What is genomics? Explain scope of r-DNA.

Or

- (b) Write about shot gun sequencing method.

14. (a) Explain formation of insect resistant plants using Ti plasmids.

Or

- (b) Write note on monoclonal antibodies.

15. (a) Give an account on microbial recombination products.

Or

- (b) Explain the production of recombinant vaccine.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Discuss the pharmaceutical products produced through r-DNA technology.

Or

- (b) Write short note on history of r-DNA.

17. (a) Explain liposome and viral mediated transformation in bacteria.

Or

- (b) Describe agro enzyme production using r-DNA.

18. (a) Explain method of Sanger's sequence in r-DNA.

Or

- (b) Write about new generation sequence and primary walking.

19. (a) Explain methods of gene introduction of transgenic mice.

Or

(b) Note on :

(i) Embryonic stem cell method

(ii) Viral herbicides.

20. (a) Explain in detail the commercial production of insulin.

Or

(b) Explain the role of Bt in transgenic brinjal.

---