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Reg. No. : .....

Code No. : 5575

Sub. Code : PMBM 43

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

Fourth Semester

Microbiology

BIOTECHNOLOGY – Core

(For those who joined in July 2017 Onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Who invented PCR?

- (a) Kary Mullis
- (b) Gilbert
- (c) Sanger
- (d) Avery

Restriction endonucleases are also called

- (a) Molecular Scissors
- (b) cutter
- (c) Nucleases
- (d) Polymerase

Golden Rice contains

- (a)  $\beta$  - carotene
- (b) niacin
- (c) iron
- (d) biotin

The process of foreign gene expression in a plant is called

- a) Expression
- b) Polymer
- c) Restriction
- d) genetic transformation

The first animal produced from cloning is

- ) Sheep
- ) cattle
- ) camel
- ) fish

2. RFLP refers to

- (a) Restrict factor length polymorphism
- (b) Reverse Amplification Primer
- (c) Random Amplified Polymorphic
- (d) Restriction fragment length polymorphism

3. Example for Phagemid

- (a) Phasmids
- (b) pBR322
- (c) PU
- (d)  $\lambda$  ZAP

4. Which plasmid carry transfer genes called the tra gene?

- (a) F
- (b) Conjugative
- (c) resistance
- (d) col

5. The first human protein produced through recombinant DNA technology is

- (a) Biotin
- (b) Insulin
- (c) fibrin
- (d) globulin

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10. Production of transgenic animals require transfections of

- (a) Microinjection
- (b) embryos
- (c) Blood cells
- (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) Explain Maxam — Gilbert DNA sequencing.

Or

(b) Explain PCR.

12. (a) Describe Cosmids and Phagemids.

Or

(b) Write notes on Yeast cloning vectors.

13. (a) Discuss Protein activity.

Or

(b) Write about Immunological assay.

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14. (a) Explain Viral resistant plants.

Or

(b) Describe Stress tolerance.

15. (a) Write short notes on retro viral vector transfer method.

Or

(b) Describe EEE method and application.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Discuss about Restriction Enzymes and its types.

Or

(b) Describe briefly on DNA fingerprinting and RFLP.

17. (a) Write about cloning vector and special vectors.

Or

(b) Detailed notes on isolation of Phage vectors.

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18. (a) Explain structural and functional analysis of recombinants in bacteria and yeast.

Or

(b) Write about the screening procedures and cloning strategies.

19. (a) Write about the genetic Engineering of plants and plant transformation.

Or

(b) Describe developing plant strains by genetic engineering.

20. (a) Explain methodology in Transgenic mice.

Or

(b) Explain the use and development of transgenic sheep, goat and pigs.

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