

(6 pages)

Reg. No. :

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Sub. Code : KMBM 43/
PMBM 43

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL, 2019

Fourth Semester
Microbiology

BIOTECHNOLOGY

(For those who joined in July 2016 and afterwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- The type of restriction enzymes used in rDNA technology is
 - Type I
 - Type II
 - Type III
 - All of these
- Single stranded unpaired extensions formed by restriction enzyme upon cleavage is called as
 - Blunt ends
 - Flush ends
 - Sticky end
 - None of these
- Bacteriophages undergo replication by
 - Binary fission and fragmentation
 - Lytic cycle and Lysogenic cycle
 - Both (a) and (b)
 - None of these
- Expression vector differ from a cloning vector in having
 - an origin of replication
 - suitable marker genes
 - unique restriction sites
 - control elements
- Which of the following does not affect the formation of hybrid DNA?
 - Ionic strength
 - Pressure
 - Temperature
 - Homologous DNA
- Libraries constructed in plasmid vector's can be kept as
 - Plasmid containing cells
 - Naked DNA
 - Both (a) and (b)
 - Naked DNA is preferred over plasmid containing cells

7. Yellowing of plant is due to absence of

- (a) Calcium
- (b) Chlorophyll
- (c) Magnesium
- (d) Nitrogen

8. Which of the following pair of diseases is caused by virus?

- (a) Rabies, mumps
- (b) Typhoid, tetanus
- (c) Cholera, Tuberculosis
- (d) AIDS, Syphilis

9. DNA in fish is injected into

- (a) Prokaryotes
- (b) Cytoplasm
- (c) Both (a) and (b)
- (d) None of these

10. A mouse which is genetically modified by the scientists by replacing its existing gene with the artificial piece of DNA called as

- (a) Modified mouse
- (b) Knock out mouse
- (c) Altered mouse
- (d) Mutated gene

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PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write short notes on modifying enzyme.

Or

(b) Exhibit the characteristics of Type II restriction enzymes.

12. (a) Explain briefly about cosmid.

Or

(b) Explain the genomic structure of MIs and its use in DNA sequencing.

13. (a) What is gene library? Explain how it constructed and screened.

Or

(b) How will you clone a foreign DNA into yeast cell?

14. (a) How can be herbicidal resistant plant developed? Explain.

Or

(b) Write down the steps involved in the development of virus resistant plant.

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[P.T.O.]

15. (a) Write briefly about the Transgenic Bird.

Or

(b) What are the basic steps for developing transgenic cattle?

PART C — (3 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) What is blunt end ligation and explain how it is performed?

Or

(b) Write notes on

(i) RFLP

(ii) RAPD

(iii) AFLP

17. (a) Explain plasmid act as vector.

Or

(b) Write in detail about yeast cloning vector.

18. (a) Write a notes on structural and functional analysis of recombinant's in bacteria.

Or

(b) Explain

(i) DNA hybridization

(ii) Immunological assay.

19. (a) Write short notes on limitation of cloning with agrobacterium plasmids.

Or

(b) Explain the various physical method that are used to transfer a gene.

20. (a) Write short notes on method and application of Transgenic fish.

Or

(b) Describe the different methods that are used to develop transgenic mice and application of Transgenic mice.