

G-4/433/21

Roll No.

M.Sc. IV Semester Examination, 2021**MICROBIOLOGY****Paper I****(Microbial Biotechnology)**

Time : 3 Hours]

[Max. Marks : 80

Note : *All questions are compulsory. Question Paper comprises of 3 sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.*

SECTION A**1×8=8****(Objective Type Questions)***Choose the correct answer :*

- 1.** Find out the best sequence of vector in terms of increasing cloning capacity :
 - (a) Plasmid, Phage, Cosmid, BAC, YAC
 - (b) Plasmid, Cosmid, YAC, BAC, Phage
 - (c) Plasmid, YAC, Phage, BAC, Cosmid
 - (d) YAC, Phage, BAC, Plasmid, Cosmid
- 2.** Which is the correct statement for Southern Blotting :

P.T.O.

- (a) Similarity between the sequence of probe protein and experimental protein
- (b) Similarity between the sequence of probe RNA and Experimental RNA
- (c) The molecular mass of protein
- (d) Similarity between the sequence of probe DNA and experimental DNA.

- 3.** The DNA sequencing followed by Genome annotation are step of :
 - (a) Comparative Genomic
 - (b) Structural Genomics
 - (c) Functional Genomics
 - (d) Transcriptomics.
- 4.** The partial sequencing of cloned cDNA is the first step of genome characterization project. These cloned cDNA sequence are known as :
 - (a) Expressed RNA sequences
 - (b) Expressed sequence tags
 - (c) Expressed cDNA sequences
 - (d) Library.
- 5.** Which statement is not true for Bt cotton :

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- (a) A genetically modified plant
- (b) Resistant to insect through the introduction of Bt toxin gene
- (c) Resistant to all pesticide
- (d) None of the above.
- 6.** Bioremediation can clean up polluted soil by :
- (a) Adding nutrients to stimulate the activity of certain soil Bacteria
- (b) Inoculating the soil with certain Bacteria that can degrade toxic organic compound
- (c) Using plants to stimulate soil microbial activity by exuding energy compound into the rhizosphere
- (d) All of the above.
- 7.** Which of the following is not characteristics of hazardous waste :
- (a) Toxicity (b) Corrosivity
- (c) Ignitibility (d) Leakage.
- 8.** Patent in india valid for how many years :
- (a) 10 years (b) 20 years
- (c) 30 years (d) 40 years

SECTION B**4 × 6 = 24****(Short Answer Type Questions)**

Note : Attempt all questions from each unit with internal choice.

Unit-I

- 1.** Write a note on scope of Genetic Engineering.

Or

Describe the term YAC and BAC.

Unit-II

- 2.** Write a note on structural genomics.

Or

What is hybrid system ?

Unit-III

- 3.** Describe briefly the Bacterial Enterotoxin.

Or

Write a note on interferons.

Unit-IV

- 4.** Describe the role of International organization in development of Biotechnology.

[5]

Or

Explain the regulation for disposal of Biohazardous products.

SECTION C

12 × 4 = 48

(Long Answer Type Questions)

Note : Attempt all questions.

Unit-I

- 1.** What is Blotting technique ? Explain its types.

Or

Describe the agarose and polyacrylamide gel Electrophoresis.

Unit-II

- 2.** Write a note on mRNA enrichment.

Or

Describe the Immobilization technique.

Unit-III

- 3.** Explain the use of fungi in Bioremediation. Give example to support your answer.

Or

What is Biofertilizer ? Explain the role of Bacteria as Biofertilizer.

[6]

Unit-IV

- 4.** Give a detail of Government programs for development of Biotechnology.

Or

Give a detail account of patent.

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