B.Sc. Semester-VI Examination, 2022-23

MICROBIOLOGY [Honours]

Course ID : 62212 Course Code : SH/MCB/602/C-14

Course Title : Recombinant DNA Technology

Time : 1 Hour 15 Minutes Full Marks : 25

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer all the questions.

UNIT–I

1. Answer any **five** of the following questions: 1×5=5

   a) What is chimeric DNA?

   b) Name the principal enzymes for genetic engineering.

   c) What is cosmid?

   d) Write the full form of SDS-PAGE.

   e) What is gene therapy?

   f) What is dot blot?

   g) Define expression vector.

   h) What is colony hybridization?

UNIT–II

2. Answer any **two** of the following questions: 5×2=10

   a) Describe PCR technique. What is meant by Real-Time PCR? 4+1=5

   b) Explain the process of electroporation.

   c) How Bt-cotton and antisense molecules are produced through recombinant DNA technology? $2\frac{1}{2}+2\frac{1}{2}=5$

   d) Write short note on chromosome walking and chromosome jumping. $2\frac{1}{2}+2\frac{1}{2}=5$

UNIT–III

3. Answer any **one** of the following questions: 10×1=10

   a) Describe the structure of pBR 322 as cloning vector. What is its advantage and disadvantage over bacteriophage lamda vector? 8+1+1=10

   b) Describe different gene delivery techniques. 10

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