

U.G. 4th Semester Examination - 2021**MICROBIOLOGY****[HONOURS]****Course Code : MB-H-CC-L-9****(Recombinant DNA Technology)**

Full Marks : 20

Time : 1 Hour

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*1. Answer any **five** of the following question:

1×5=5

- i) What is recombinant protein?
- ii) What is biolistic or gene gun?
- iii) What are Bt-crops?
- iv) Name two enzymes used in biotechnological processes.
- v) What sequence feature do restriction site have?
- vi) Mention the role of Mg^{+2} in PCR reaction.
- vii) What is shuttle vector?
- viii) What are the commonly used vectors for gene expression in prokaryotic and eukaryotic systems?

2. Answer any **one** of the following: 5×1=5

- i) What's the difference between a plasmid and a vector?
- ii) Distinguish between BAC and YAC.
- iii) Outline the steps in Polymerase chain reactions and provide an example of its use.

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

- i) Mention the steps involved in recombinant DNA technology. Mention the methods of making bacteria capable to take up recombinant DNA. 7+3
- ii) How might the proteins produced by *E. coli* differ from the protein produced from the same gene in a human cell? Describe the principle and methods of Northern blotting. 3+7
- iii) Name the three basic steps involved in genetically modifying an organism. Illustrate the application of genetic engineering in Health care. 3+7
