

U.G. 5th Semester Examination - 2020**MICROBIOLOGY****[HONOURS]****Discipline Specific Elective (DSE)****Course Code : MB-H-DSE-L-02****(Microbial Biotechnology)**

Full Marks : 40

Time : 2½ Hours

*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 the following questions : 1×10=10
- i) Write two characteristics of the microorganism to be used for industrial application.
 - ii) Which enzymes cut the DNA molecule at a particular nucleotide sequence?
 - iii) What are immobilized enzymes?
 - iv) What are transgenic bacteria?
 - v) What are Cry proteins?
 - vi) What do you mean by RNA interference?
 - vii) Write the characteristics of adenosine deaminase deficiency.
 - viii) Define GEAC.

- ix) What is Biopiracy?
 - x) What enzyme is used to make fructose syrup?
2. Answer any **five** of the following: 2×5=10
- i) Crystals of Bt-toxin produced by some bacteria do not kill the bacteria themselves – explain.
 - ii) What is gene therapy?
 - iii) What are biopesticides?
 - iv) Which microorganisms is used to degrade the oil spills?
 - v) What do you mean by bioremediation?
 - vi) What is lignocellulosic material?
 - vii) What are the chemical composition biodiesel?
3. Answer any **four** of the following: 5×4=20
- i) Define vaccine. Explain the commercial production of Hepatitis B vaccine. 2+3
 - ii) Write short notes on microbial degradation of xenobiotics.
 - iii) Compare and contrast the merits and demerits of production of genetically modified crops.
 - iv) What are the applications of microbial biotechnology in human therapeutics?
 - v) PHAs is an efficient replacement of synthetic polymers, explain.
 - vi) Write short notes on cell immobilization and its applications in biotechnology.