DCU-003-1191002 Seat No. _____

M. Sc. (Sem. I) (CBCS) (WEF-2016) Examination

August - 2022

MICRO-102 : Microbiology

(Molecular Biology, Genetics & Evolution)

(General Option)

Faculty Code : 003

Subject Code : 1191002

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instruction : Answer any five questions.

1 Answer the following questions : **14**

(1) What is mutation, give an example ?

(2) What is importance of codon usage bias ?

(3) What is significance of DNA damage and repair ?

(4) What is Coacervates ?

(5) What is significance of wobble hypothesis ?

(6) What is gene splicing ?

(7) What is significance of palindromic sequences ?

2 Answer the following questions : **14**

(1) Briefly write a note on Mendelian laws.

(2) Write significance of Natural selection during evolution.

3 Answer the following questions : **14**

(1) Write a note on genetics of speciation.

(2) Discuss C value paradox in detail.

4 Answer the following questions : **14**

(1) Discuss in detail process of replication in prokaryotes.

(2) Write a note on Millers experiment.

5 Answer the following questions : **14**

(1) Write a note on components of Nucleic acid.

(2) Discuss structural difference in prokaryotic and eukaryotic DNA.

6 Answer the following questions : **14**

(1) Enlist and explain the features of genetic code.

(2) Write a note on role of ribosome in translation.

7 Answer the following questions : **14**

(1) Write a note on role of RNA polymerase in transcription.

(2) Write in detail about gene structure of prokaryotes and eukaryotes.

8 Answer the following questions : **14**

(1) Write a detailed note on chromosome mapping.

(2) What are mutagens? Discuss in detail about types of mutagens.

9 Answer the following questions : **14**

(1) Write a detailed note on DNA repair mechanism.

(2) Write a note on DNA Methylation.

10 Answer the following questions : **14**

(1) Write a note on extra-chromosomal inheritance with suitable example.

(2) Write a note on molecular basis of mutation.
