

U.G. 4th Semester Examination - 2021

MICROBIOLOGY

[HONOURS]

Course Code : MB-H-CC-L-8

(Microbial Genetics)

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 questions:

1×5=5

- i) Which cell organelle contains circular genome?
- ii) What do you mean by host range of plasmid?
- iii) Write the name of genes which control the copy number of plasmid.
- iv) Write the name of two regulatory proteins involved in lytic-lysogenic switching.
- v) Write the function of P-element.
- vi) Write the relation between recombination frequency and map unit.

vii) What is specialized transduction?

viii) What is non-composite transposons?

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

- i) How RNA I and RNA II involved in copy number control of plasmid in *E.coli*.
- ii) Describe how a non-functional gene could regain the functionality due to mutation.
- iii) Briefly describe the process of Hfr mediated time mapping.

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

- i) Write the salient feature of *Tetrahymena* genome. What is a point mutation? Briefly describe different types of point mutation.

5+1+4

- ii) How plasmids in bacterial cell distributed during cell division? Write briefly about the genetic basis of lytic-lysogenic switching of lamda phage.

5+5

- iii) Write short notes on the following: 2½×4

- a) Tautomeric shift
- b) Ty-element of yeast
- c) F plasmid
- d) Transposon as a mutagen

[Turn Over]