

2022

BOTANY

[P.G.]

(CBCS)

(M.Sc. First Semester End Examinations-2022)

PAPER-101

[MICROBIOLOGY]

Full Marks: 40

Time: 02 Hrs

The figures in the right hand margin indicate marks

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

Illustrate the answers wherever necessary

Group - A

1. Answer any four questions of the following: **4x2= 8**
- Why moist is more effective than dry heat for sterilization?
 - What is "nif" gene?
 - Define autotrophic and heterotrophic bacteria. Give examples.
 - Distinguish between batch and continuous culture.
 - Write the equation of generation time and growth rate of microbes.
 - What are hyperthermophiles? Give example.

(2)

- g) What is active artificial immunity? Give an example.
- h) What is epitope?

Group - B

2. Answer any four questions: 4x4= 16

- a) With the help of a flowchart describe the production process of beer.
- b) Give the mode of action of tetracycline as an antibacterial agent.
- c) Write a note on plasmid.
- d) Discuss three domain concept of Woese. What are magnetosomes? 3+1
- e) Schematically represent the ED pathway.
- f) What are Hfr strains? How do they differ from F+ strains. 1+3

Group - C

3. Answer any two questions 2x8= 16

- a) Draw and describe the structure of bacterial flagella. 3+5
- b) Explain the structure of nitrogenase enzyme. Mention the role of leghemoglobin in nitrogen fixation. (3+2)+3
- c) Distinguish between killed vaccine and attenuated vaccine. Name a double stranded RNA and single stranded DNA virus. What are prions? 4+2+2

(3)

- d) How monoclonal antibody differs from polyclonal antibody? Write down process for monoclonal antibody production. 3+5
