

2022

Microbiology

[P.G.]

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

PAPER-101

[Fundamentals of Microbes: Prokaryotic Microorganisms and
Eukaryotic Microorganisms]

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

(MCB-101.1)

Marks 20

1. Answer any two question from the following: 2x2= 4
 - a. Write the Oparin-Haldane hypothesis.
 - b. Write the general character of Rickettsia sp.
 - c. What is genomic fingerprinting?
 - d. What is type stain? Mention its importance.

2. Answer any two question from the following: 2x4= 8
 - a. Briefly describe the Miller and Uray experiment to support the origin of life.

(2)

- b. Schematically represent the 'EB' and 'RB' phase of Chlamydia sp.
- c. Write a short note (any one): Ribotyping or RAPD
- d. What are unculturable bacteria? Give one example. What is candidate phyla radiation? 1+1+2
- 3. Answer any one question from the following: 1x8= 8**
- a. Write the special feature of cell wall and cell membrane of archaebacteria. Write the physiology and molecular adaptation of halobacteria. 4+4
- b. Write the Bergey's Manual of systematic Bacteriology based on Phenetic Classification and phylogenetic classification.

Group-B

(MCB-101.2)

Marks 20

- 1. Answer any two question from the following: 2x2= 4**
- a. Mention the different molecular techniques employed in modern mycological classification.
- b. Why phaeophyceae is called brown algae?
- c. What are fumonisins? Mention the harmful effects of ergot alkaloids.
- d. What are mycorrhizae? Mention their importance.
- 2. Answer any two question from the following: 2x4= 8**
- a. Briefly describe multiple fission of protozoa.

(3)

- b. Discuss with diagram the origin of group II algae in light of endosymbiotic theory.
- c. Mention the source and mode of action of any four fungal metabolites that have been used to manufacture industrially important products.
- d. What are the alterations in the regulatory circuits of yeast for adaptation to new environment?
- 3. Answer any one question from the following: 1x8= 8**
- a. Describe the silent feature of the 9 major lineages of true fungi.
- b. Mention the role of Contractile vacuole and Eyespot in protozoa. How Trypanosoma complete its lifecycle? Write down the economic importance of protozoa. 2+2+4
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