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RNLKWC/M.Sc.-CBCS/IS/MB./P.G./101/21

2021

Microbiology

[P.G.]

(CBCS)

(M.Sc. First Semester End Examinations-2021)

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. 2
 - b. What is the significance of GC-ratios in bacterial classification? 2
 - c. Write the endosymbiotic theories. 2
 - d. What is metagenomic? Write advantage of metagenomic. 1+1

- 2. Answer any two question from the following: 4x2= 8**
 - a. Briefly describe the Miller and Urey experiment in support of origin of life. 4

(2)

- b. Schematically represent the mitochondrial origin in a prokaryotic host. 4
- c. Mention in brief the salient features of Chlamydia. 4
- d. What are STRR and LTRR? Write their applications. 2+2

3. Answer any one question from the following: 8x1= 8

- a. Write the special feature of cell wall and cell membrane of Archea in brief. Write in brief the physiology and molecular adaptation of halobacteria. 4+4
- b. Write the DNA fingerprinting method based on 16srRNA. Write down the pathogenicity of Mycoplasma sp and Rickettsia sp. 4+(2+2)

Group-B (MCB-101.2)

Marks 20

- 1. Answer any two question from the following: 2x2= 4**
- a. What are epitheca and hypotheca in algae? 2
- b. With example state what is the difference between truly branched and falsely branched filamentous algae? 1+1
- c. Define dimorphic fungi. What is ergotism? 1+1
- d. What are secondary metabolites? Write the name of one fungi which produce terpenes. 1+1

(3)

2. Answer any two question from the following: 4x2= 8

- a. Write a short note on algal farming. Write down the economic importance of diatoms. 2+2
- b. Write Schematically how more biofuel can be produced by genetic engineering of algae. 4
- c. What is bio pesticide? Name two fungal biopesticides and name the affected insects by them. 2+2
- d. What are the strategies applied for reduction and controlling of mycotoxins? 4

3. Answer any one question from the following: 8x1= 8

- a. Give the classification of algae by Lee in brief. 8
- b. What is mycorrhizal symbiosis? Distinguish between ecto and endo mycorrhiza. State the applications of mycorrhiza in agriculture. 2+2+4
