

2022

Microbiology

[P.G.]

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

PAPER-102

[Biochemistry, Biophysics, and Bioinstrumentation]

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-102.1)

Marks 20

1. Answer any two question from the following: 2x2= 4
 - a. Mention the differences in the entry or penetration mechanism between enveloped and non-enveloped viruses.
 - b. Define viroids and prion.
 - c. Differentiate innate and adaptive immune response against virus.
 - d. What is oncogenic virus? Give one example of oncogenic virus. 1+1

2. Answer any two question from the following: 2x4= 8
 - a. Mention about a chemical antiviral agent and its mode of action. 1+3

(2)

- b. With example classify virus based on their structure.
- c. Briefly state each steps of a viral infection cycle. What is prophage? 3+1
- d. Define Concatamer and Terminal Redundancy. Write a short note on M 13 bacteriophage. 2+2
- 3. Answer any one question from the following: 1x8= 8**
- a. Mention the role of inflammosome in virus-host interaction. With diagram discuss the apoptosis process. 4+4
- b. Explain the Rolling hair pin model of replication. In which virus this model is observed? Give one example of ds RNA virus and describe its transmission strategy. 3+1+1+3

Group-B (MCB-102.2)

Marks 20

- 1. Answer any two question from the following: 2x2= 4**
- a. What are the general properties of TMV?
- b. Give the examples of one ss DNA and ss RNA viruses.
- c. Describe any one method for the quantitation of plant virus.
- d. How plant RNA virus is detected by RT-PCR?
- 2. Answer any two question from the following: 2x4= 8**
- a. Write down a short note on one step growth curve.
- b. Differentiate between lytic and lysogenic cycle of bacteriophage.

(3)

- c. Write schematically Baltimore classification of animal virus.
- d. Write briefly different methods of transmission of plant viruses.
- 3. Answer any one question from the following: 1x8= 8**
- a. Describe the structure and replication of Influenza virus in nasal epithelial cells. Write a short note on satellite viruses. 4+4
- b. i) Describe the mode of transmission of polio virus, and management of polio infection by vaccination.
- ii) How Covishield vaccine has been developed for SARS-CoV-2? 4+4
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