

Total Pages-03

RNLKWC/M.Sc.-CBCS/IS/MB./P.G./102/21

**2021**

**Microbiology**

**[P.G.]**

**(CBCS)**

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

**PAPER-102**

**[Fundamentals of Microbes]**

**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 anytwo question from the following:      2x2= 4**
  - a. Write a short note on Type 1 Interferon. 2
  - b. Give example of ssDNA, dsDNA, ssRNA and dsRNA viruses? 2
  - c. Differentiate Rolling circle and Rolling Hairpin model of replication. 2
  - d. Classify viral infections by outcome of the immune response? 2
  
- 2. Answer any two question from the following:      4x2= 8**
  - a. What is complex virus? Give examples. 3+1

(2)

- b. Explain with example horizontal and vertical transmission of viruses. 4
- c. Give a brief account of some viral strategies to escape host immune response. 4
- d. Mention about a biological antiviral agent and its mode of action. 1+3

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

- a. Describe in detail the cell culture method. 8
- b. Differentiate apoptosis and pyroptosis. Which organelle is involved in pyroptosis process? Discuss the process. 3+1+4

**Group-B (MCB-102.2)**

**Marks 20**

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

- a. Define the terms-concatamer, Terminal Redundancy headfull packaging and circular permutation. 2
- b. How plant viruses are transmitted through different vectors? 2
- c. Which type of phage is M13? Virulent or temperate or any other type? 2
- d. Discuss the techniques of making virus free plants. 2

(3)

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

- a. Mention about the regulatory mechanism involved in lambda phage's lytic versus lysogenic decision making processes. 4
- b. Give one example of positive (+) sense RNA virus and describe its transmission strategy. 1+3
- c. Write a short note on ELISPOT assay. 4
- d. Describe the life cycle, pathogenicity and treatment of oncogenic virus. 4

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

- a. Looking at the one step growth curves, why does the virus initially disappear from the intracellular samples? Briefly explain the curve. What is MOI? Why does it affect the plaque assay? 2+4+1+1
- b. Compare between live attenuated and heat killed vaccine with example. Which type of immunity is provided by vaccine? How the vaccine against Hepatitis B virus is produced? What are Salk and Sabin? 3+1+2+2

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