

[4]

3. Point out the difference between virus, viroid and Prions. Give the features and diseases mediated by prions.

Or

Write short notes on :

- (a) Morphology and life cycle of M13 phage,
 - (b) Various morphological forms of DNA animal viruses.
4. Give an illustrative account on genome, life cycle, and disease produced by Herpes virus.

Or

Write short notes on :

- (a) Primary and secondary cell cultures used for cultivation of viruses.
- (b) Propagation of animal viruses through animal inoculation.

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G-1/135/21

Roll No.....

I Semester Examination, April-2021

M.Sc.

MICROBIOLOGY

Paper I

(Bacteriology and Virology)

Time : 3 Hours]

[Maximum Marks : 80

Note : All questions are compulsory. Question Paper comprises of 3 sections. **Section A** is objective type/Multiple Choice questions with no internal choice. **Section B** is short answer type with internal choice. **Section C** is long answer type with internal choice.

SECTION 'A'

(Objective Type Questions)

Choose the correct answer :

8 × 1 = 8

1. The bond between N acetyl glucose amino and N acetyl muramic acid of bacterial peptidoglycan is :
 - (a) α 1-4
 - (b) α 1-6
 - (c) β 1-4
 - (d) β 1-3
2. Which of the following flagellar arrangement is present in *E. coli* ?
 - (a) Monotrichous
 - (b) Peritrichous
 - (c) Lophotrichous
 - (d) Amphitrichous
3. Lowenstein Jensen medium used for cultivation of *M. tuberculosis* is sterilized by :
 - (a) Autoclaving
 - (b) Arnold sterilization
 - (c) Inspissation
 - (d) Hot air oven

[2]

4. Bacteria belonging to division graciticuties have which type of cell wall :
 (a) Gram positive (b) Gram negative
 (c) No cell wall (d) Archaeobacterial
5. What is the genome of Pox virus ?
 (a) SS DNA (b) DS DNA
 (c) SS RNA (d) DS RNA
6. The name 'Bacteriophage' was coined by :
 (a) Frosch and Loeffler (b) Dimitri Iwanowski
 (c) Felix D' Herelle (d) Bawden and Pirie
7. Yolk sac is the site of inoculation especially for :
 (a) Herpes virus (b) Pox virus
 (c) HIV (d) Influenza virus
8. Plaque assay method was introduced by :
 (a) Robert Koch (b) Dulbecco
 (c) Max Theiler (d) Max Delbruck

SECTION 'B'

6 × 4 = 24

(Short Answer Type Questions)

Note : Answer the following questions in 250 words.

1. Write short note on any one of the following :
 (a) Stages of formation of bacterial endospore,
 (b) Significance of polyphosphate granules in bacteria.
2. Write short notes on any one of the following :
 (a) Different nutritional types of bacteria,
 (b) Use of moist heat in controlling bacteria.

[3]

3. Write short notes on any one of the following :
 (a) Morphological features of T3 phage,
 (b) Enveloped DNA viruses.
4. Write short note on any one of the following :
 (a) Different layers of embryonated egg,
 (b) Haemeagglutination method for performing virus assay.

SECTION 'C'

12 × 4 = 48

(Long Answer Type Questions)

Note : Answer the following questions in 500 words.

1. Give an illustrative account on structural features of cell wall of gram positive, gram negative bacteria, and comment on the antigenic nature of both types of cell walls.

Or

- (a) What are the morphological and cultural characteristics of Actinomycetes ? Comment upon their economic importance.
- (b) What are the different arrangements of flagella observed in bacteria ? Point out the difference between flagella of gram positive and gram negative bacteria.

2. What is the three domain concept of classification. Give the major characteristics of members belonging to domain Archea

Or

Write short notes on the following :

- (a) Salient features of various phases of a typical bacterial growth curve.
- (b) Methods for preservation of bacteria.