

M.Sc. BOTANY
FIRST SEMESTER (REPEAT)
BACTERIA AND VIRUS
MSB-104 (IDMn)
[USE OMR SHEET FOR OBJECTIVE PART]

2023/12

**SET
A**

Duration: 1hr. 30 mins.

Full Marks: 35

Time: 15 mins.

(Objective)

Marks: 10

Choose the correct answer from the following:

1×10=10

1. A characteristic growth curve with four distinct stages of bacterial growth is obtained in:
a. Synchronized culture b. Batch Culture
c. Continuous culture d. Slant Culture
2. *Streptococcus* bacteria are:
a. Spherical shaped b. Spiral shaped
c. Rod shaped d. Comma shaped
3. Bacterial cell having flagella at both posterior and anterior end is known as:
a. Atrichous b. Bitrichous
c. Peritrichous d. Amphitrichous
4. The correct staining procedure in Gram staining starting from step 1 to step 4 is:
a. Crystal violet → Gram Iodine → Ethanol → Safranin
b. Crystal violet → Ethanol → Gram Iodine → Safranin
c. Safranin → Gram Iodine → Ethanol → Crystal violet
d. Safranin → Ethanol → Gram Iodine → Crystal violet
5. The uptake of DNA fragments from the surrounding medium is known as:
a. Transduction b. Co-transduction
c. Conjugation d. Transformation
6. The first virus to be discovered was:
a. Prion b. Tobacco Mosaic Virus
c. Virusoid d. Bacteriophage
7. Which of the following is not a characteristic of all viruses?
a. Potentially pathogenic b. Replicates only inside the host cell
c. Contain DNA or RNA d. Contain Ribosomes
8. Icosahedron viruses have:
a. 20 faces with 3-5-1 symmetry b. 20 faces with 2-3-5 symmetry
c. 20 faces with 3-4-2 symmetry d. 20 faces with 2-4-6 symmetry
9. Which of the gene product protein is located at the lower part of the head?
a. gp24 b. gp23
c. gp20 d. None of the above

10. The genetic material of TMV is:

a. ss-RNA

c. Circular RNA

b. ds-RNA

d. Segmented RNA

(Descriptive)

Time : 1 hr. 15 mins.

Marks : 25

[Answer question no.1 & any two (2) from the rest]

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| 1. What is virus? Write note on envelope and non-envelop viruses. | 1+4=5 |
| 2. What is transduction? With appropriate diagram, discuss on the various types of transduction. | 1+9=10 |
| 3. Write in brief the general characteristics of bacteria. What are the harmful and beneficial effects of bacteria? | 2+4+4=10 |
| 4. Write notes on:
a) Tobacco Mosaic Virus
b) Viral genome | 5×2=10 |
| 5. With appropriate figures, discuss on the ultrastructure and life cycle of T4 bacteriophage. | 10 |

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