

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(Sixth Semester)

Branch – MICROBIOLOGY

VIROLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Viruses, outside their host cells, survive as
 - (i) Bacteria
 - (ii) Virions
 - (iii) Algae
 - (iv) Protozoa
- 2 Which of the following statement about embryonated eggs is incorrect?
 - (i) It is a complex structure.
 - (ii) Used as a host system for isolating viruses.
 - (iii) It cannot be used as a host system for isolating coronavirus.
 - (iv) It is used as a propagation system of viruses, mainly for research purposes.
- 3 Which of the following is an example of ssDNA bacteriophage?
 - (i) Φ X174
 - (ii) Φ X175
 - (iii) Φ X1744
 - (iv) None of the above
- 4 Which of the following action takes place during virus entry?
 - (i) Capsid shells are primed and disassembled in a complex, tightly-regulated, multi-step process termed uncoating.
 - (ii) Virus genomes are condensed and packaged inside stable proteinaceous capsids.
 - (iii) Virions adsorb on the surface of host and attacks them.
 - (iv) Virus particles diffuse along the membrane of bacterial cells.
- 5 Which of the following is the first plant virus to be discovered?
 - (i) Polio virus
 - (ii) Tobacco mosaic virus
 - (iii) Cauliflower mosaic virus
 - (iv) Brome mosaic virus

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Give a detailed account on the types of virus capsids.
OR
b Discuss in detail about virus envelopes.
- 7 a Write a short note on the process of virus cultivation.
OR
b Elaborate about the various techniques carried out for virus purification.
- 8 a With suitable illustration explain about any one of bacteriophages.
OR
b Explain about rolling circle replication in ssDNA viruses.
- 9 a Narrate the replication process involved in anyone of the animal viruses.
OR
b What do you infer from cytotoxic infections?

Cont...

- 10 a Discuss about virion morphology.
OR
b Describe in detail about the major differences between viroids and prions.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 6 = 30)

- 11 a Give a detailed account on earlier and current development of virology.
OR
b Elaborate about the structure of virus with suitable example.
- 12 a Demonstrate a suitable viral titration assay.
OR
b Give a detailed account on viral purification techniques.
- 13 a Demonstrate the one-step multiplication curve of a bacteriophage lifecycle.
OR
b With suitable example, explain about temperature dependent bacteriophages.
- 14 a Elaborate the synthesis and assembly of virus capsids.
OR
b With a schematic illustration explain the process of virion release.
- 15 a Discuss in detail about the mechanism of plant virus transmission in plants with suitable example.
OR
b Elaborate on insect viruses with suitable example.

Z-Z-Z

END