

SEAT No. _____
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SARDAR PATEL UNIVERSITY
B.Sc (Semester V)
Date: 07/10/2025
Subject-Microbiology
US05CMIC23 – Virology and Mycology



Time: 10.00 to 1.00 pm

Total Marks: 70

N.B. (i) All questions are compulsory. (ii) Figures on right indicate marks.

Q.1. Select the right answer.

(10)

- 1) Capsid of bacteriophage is made up of _____.
(a) DNA (b) Protein
(c) RNA (d) Organic Acid.
- 2) Injection of filamentous phage DNA into the host bacterium occurs _____.
(a) Via pilus (b) By Surface attachment
(c) By transformation (d) By transfection.
- 3) _____ serves as receptor for HIV.
(a) CD3 marker for cell. (b) Epidermal growth factor.
(c) CD4 protein on T-Helper cell. (d) None of these.
- 4) _____ is an example of head and tail bacteriophage.
(a) M13 (b) Pbr322
(c) M16 (d) Lambda Phage.
- 5) _____ was the first detected oncogenic virus.
(a) Rous Sarcoma (b) Herpes simplex
(c) Epstein Bar Virus (d) None of these.
- 6) Bessey included Phycomycetes in _____ class of fungi.
(a) Lower (b) Higher
(c) Middle. (d) Super
- 7) Fungi that take nutrition from living cells are known as _____.
(a) Saprophytic (b) Parasitic
(c) Photosynthetic (d) None of these.
- 8) _____ is an example of fungal sex hormone.
(a) Estrogen (b) Serenin
(c) Thyroid (d) All of these.
- 9) _____ is an example of secondary metabolite.
(a) Carbohydrates (b) Protein
(c) Lipids (d) Antibiotic
- 10) *Claviceps purpurea* produces _____ toxin
(a) Yellowed rice (b) Afla
(c) Ergot (d) Amanita

continue.....

Q.2) Answer in brief (Any10)

(20)

- 1) Draw a structure of TMV.
- 2) Explain role of Cro protein in lytic cycle.
- 3) List advantages of lysogeny.
- 4) Enlist two applications of viruses.
- 5) Write two characteristics of viruses that infect higher fungi.
- 6) Define: Metastasis and Neoplasia.
- 7) List various asexual fungal spores.
- 8) Draw labelled diagram of "9+2" fungal flagella.
- 9) Define: Homothallism and Heterothallism.
- 10) Define: Secondary metabolites. Give two examples.
- 11) Write symptoms of candidiasis.
- 12) Name enzymes produced by *Aspergillus flavus*.

Q.3) Explain molecular mechanism of establishment and maintenance of lysogeny of lambda phage.

(10)

OR

Q.3) (a) Short Note: RNA Phages.

(05)

(b) Explain adsorption and penetration of phage T4 in host *E.coli*.

(05)

Q.4) Explain: Life cycle of DNA containing Animal viruses.

(10)

OR

Q.4) (a) Short Note: Oncogenic viruses.

(05)

(b) Write a note on: TMV.

(05)

Q.5) Write in detail: Fungal Nutrition.

(10)

OR

Q.5) (a) Short Note: Sexual reproduction in Fungi.

(05)

(b) Short Note: Fungal classification by Martin.

(05)

Q.6) Explain in detail: Fungal Sex Hormones.

(10)

OR

Q.6) (a) Write a note on: Aflatoxin.

(05)

(b) Short Note: Histoplasmosis

(05)

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