

PARUL UNIVERSITY
PARUL INSTITUTE OF APPLIED SCIENCES
MID SEMESTER INTERNAL EXAMINATION, APRIL 2020
B. Sc. Microbiology Semester IV

Paper Name: Molecular Virology

Date: 02/03/2020

Paper Code: 11201151

Time: 1hr 30min

Max. Marks: 40

Instructions:

1. All questions are compulsory and options are given in first and second question only.
 2. Numbers to the right of question indicate the marks of respective question.
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Q. 1 Attempt any one question of the following. **(08)**

(i) Describe in detail the structure and replication of Cauliflower Mosaic Virus (CaMV).

(ii) Describe in detail the structure and replication of Adenovirus.

Q. 2 Attempt any three questions of the following. **(12)**

(i) Describe Baltimore classification of viruses.

(ii) What are the purpose of virus cultivation.

(iii) write a short note on multiplicity reactivation.

(iv) What is Recombination in Phage?

(v) Explain the replication of Poxvirus?

Q. 3 Do as directed. Attempt all five questions. **(05)**

(i) What is a nucleocapsid?

(ii) What is cytopathic effect in viral detection?

(iii) What is plaque in virology?

(iv) What is Antigenic Shift

(v) What is phenotypic mixing

Q. 4 Write correct option in your answer sheet for following 15 multiple choice questions. **(15)**

MCQ 1 Viruses that contain two complete copies of positive strand RNA and the enzyme reverse transcriptase are:

- (A) Toga viruses (B) Rhabdoviruses
(C) Retroviruses (D) Reoviruses

MCQ 2 A structural component that is found in all viruses is:

- (A) The envelope (B) DNA
(C) Capsid (D) Tail fibers

MCQ 3 Bacteriophage are readily counted by the process of:

- (A) .Immunoassays (B) ELISA
(C) Plaque Assay (D) Tissue cell culture

MCQ 4 A type of cell culture that can reproduce for an extended number of generations and is used to support viral replication is

- (A) Primary cell culture (B) Continuous cell line
(C) Cell strain (D) Diploid fibroblast cell

MCQ 5 Which of the following is not an RNA virus?

- (A) Retrovirus (B) Enterovirus
(C) Rhabdovirus (D) Adenovirus

MCQ 6 Tobacco Mosaic Virus is

- (A) spherical shaped (B) rod shaped helical
(C) Cuboidal (D) oval shaped
- MCQ 7 The capsid of tobacco mosaic virus (TMV) has capsomeres numbering
(A) 1230 (B) 2130
(C) 2310 (D) 3120
- MCQ 8 Adenoviruses exhibit which of the following symmetry?
(A) helical symmetry (B) circular symmetry
(C) icosahedral symmetry (D) complex structure symmetry
- MCQ 9 Poxvirus are _____ shaped.
(A) A) Brick (B) B) Round
(C) C) Helical (D) D) Head and tail
- MCQ 10 The transfer of genes from one cell to another by a bacteriophage is known as _____
(A) Recombination (B) Conjugation
(C) Transduction (D) Transformation
- MCQ 11 Zone of cell death or a clear area on a bacterial lawn culture where viruses have lysed host cells is called _____.
(A) Immunoassays (B) ELISA
(C) Plaque Assay (D) Tissue cell culture
- MCQ 12 Adenovirus is classified in which group according to Baltimore.
(A) Group I (B) Group II
(C) Group III (D) Group IV
- MCQ 13 2 viruses infect a cell, virus A has its own genetic material, but the surface proteins of virus B, the phenomenon is called as _____.
(A) Recombination (B) Phenotypic mixing
(C) Antigenic shift (D) Antigenic drift
- MCQ 14 Small changes to the genetic makeup of influenza strains are referred to as antigenic_____, while a major change is called antigenic_____.
(A) Drift, shift (B) Shift, drift
(C) Drift,shift (D) Drift,swift
- MCQ 15 _____is the process by which influenza viruses swap gene segments. This genetic exchange is possible due to the segmented nature of the viral genome and occurs when two differing influenza viruses co-infect a cell.
(A) Reassortment (B) Recombination
(C) Antigenic shift (D) Phenotypic mixing