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Sardar Patel University
M. Sc. Integrated Biotechnology, Fourth Semester Examination
Monday, 11th April, 2016
10:30 a.m. – 01:30 p.m.
PS04CIGB06: Virology

Q-1 **Give the answer by choosing appropriate option.** [8 X 1=08]
  (1) TMV is a _____ virus.
    (a) Plant   (b) Animal   (c) Phage   (d) All of them
  (2) HIV is cause by _____ virus.
    (a) Adeno   (b) Onco   (c) Retro   (d) None of them
  (3) Phages have _____ as genetic material.
    (a) ss DNA   (b) ds DNA   (c) ss RNA   (d) All of them
  (4) Single stranded icosahedral DNA bacteriophage is _____.
    (a) T_2 (b) ΦX 174   (c) T_7 (d) None of them
  (5) In following growth period, the host cell rapidly lyse and release infective phages.
    (a) Latent   (b) Eclipse   (c) Rise   (d) None of these
  (6) Those bacteriophage able to become prophages are called as _____.
    (a) temperate   (b) virulent   (c) (a) and (b)   (d) None of these
  (7) _____ of the following vector can be used for DNA fingerprinting.
    (a)M_{13} (b) Cosmid   (c) λ Phage   (d) None of these
  (8) Cosmid can accomodate upto _____ size of foreign DNA inserts.
    (a)20   (b) 40   (c) 8   (d) 30

Q-2 **Answer the following questions in short. (Any seven)** [7 X 2=14]
  (1) What are oncoviruses?
  (2) Enlist the general properties of viruses.
  (3) Write a note Icosahedral structure of viruses.
  (4) Explain Mu phage.
  (5) Write basic features of T_7 phage.
  (6) Define the terms: Lytic cycle and Lysogeny
  (7) Briefly write organization of nucleic acid in viruses.
  (8) Explain complementation in bacteriophage.
  (9) What is phenotypic mixing in bacteriophage?

P.T.O.

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Q-3	(a)	Mention and explain any two methods used to enumerate viruses.	[06]
	(b)	Note on "General structure and chemistry of viruses"	[06]
		OR	
	(b)	Which methods are used to isolate and purify viruses? Briefly explain two methods.	[06]
Q-4	(a)	Give detailed account on Phage M_{13}.	[06]
	(b)	Briefly depict on single stranded RNA phage MS_2.	[06]
		OR	
	(b)	Elaborate on $\Phi X\ 174$ bacteriophage.	[06]
Q-5	(a)	Write a short note on one step growth experiment.	[06]
	(b)	Briefly explain lytic cycle of lambda bacteriophage.	[06]
		OR	
	(b)	What is lysogenic conversion? Explain the role of Cro protein and lambda repressor in bacteriphage lambda.	[06]
Q-6	(a)	Discuss different strategies for the selection of recombinant λ vector.	[06]
	(b)	Explain the properties and significance of Phasmid vectors.	[06]
		OR	
	(b)	Write a short note on Cosmid vector.	[06]

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