SC

SEAT No._____

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[11]

Sardar Patel University
M.Sc. Integrated Biotechnology
IGBT-PS04CIGB06 (Virology)
Tuesday, 24th April 2018
10:00 A.M. to 01:00 P.M.

Total marks: 70

Note:
1) Figures to the rights indicate marks
2) Draw neat and labeled diagram wherever necessary.

Q.1 **Mark the right answer of following questions.** **[08]**

1. Viruses largely lack metabolic machinery of their own to generate energy or to synthesize _____.
   a) Carbohydrate b) Alcohol
   c) Protein d) None of these
2. Viral envelope is made up of _____.
   a) lipids b) proteins
   c) lipids and proteins d) lipids and glycoproteins
3. _____ phage consists of overlapping genes.
   a) M13 b) ϕX 174
   c) T7 d) MS2
4. *Escherichia coli* is host for _____ phage.
   a) M13 b) T7
   c) MS2 d) All of these
5. Development of the one-step growth experiment was done by _____ scientist.
   a) Bawden et al b) Emory Ellis
   c) Knoll and Ruska d) Joseph Lister
6. The viral genome integrated to bacterial genome is called _____.
   a) plasmid b) prophage
   c) virion d) capsid
7. _____ Vector can be used as a riboprobe vector.
   a) cosmid b) phasmid
   c) phagemid d) M13
8. The viruses in an attenuated vaccine_____.
   a) is altered with chemicals b) continue to replicate
   c) are usually larger than bacteria d) have no genome

P.T.O.

Q.2 **Answer the following questions. (ANY SEVEN OUT OF NINE)** **[14]**

1. Define: Virus. Write general characters of viruses.
2. Enlist and explain any one of the morphology of viruses.
3. Explain structure of viruses in brief.
4. Justify reason for Transposable phage known as mutator phage.
5. Explain early events of replication in bacteriophage T7.
6. Define: Eclipse period and Burst size
7. Differentiate between lytic and lysogency cycle.
8. Explain role of complementation with suitable example.
9. What is host induced modification? Give its example.

Q.3 **A.** Enlist and explain any two methods used for enumeration of viruses. **[06]**

B. What are oncogenes? Explain role of viruses in causing cancer. **[06]**

OR

B. Explain in detail isolation, purification and replication of plant viruses with suitable example. **[06]**

Q.4 **B.** Elaborate on morphology, properties and replication of ϕX 174 **[06]**

B. Give a detail note on single stranded RNA phage. **[06]**

OR

B. Describe about single stranded filamentous DNA phage M13. **[06]**

Q.5 **A.** Discuss one step growth experiment of viruses in detail. **[06]**

B. Write a note on lytic cycle of viruses with relevant example. **[06]**

OR

B. Explain genetic regulation of lytic and lysogeny cycle of lambda phage. **[06]**

Q.6 **A.** Explain mechanism of phenotypic mixing of viruses. **[06]**

B. What are Cosmids vector? Give a detail note on it. **[06]**

OR

B. Summarize in brief construction and advantages of λ phage vector. **[06]**

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