

**S. Y. B. Sc. (Biotechnology) SEM – III (CBCS - 2015 COURSE) :**

**WINTER - 2018**

**Subject: Concepts in Microbiology**

Day: Monday  
Date: 22/10/2018

**W-2018-1174**

Time: 02.00 PM TO 05.00 PM  
Max. Marks: 60

**N.B.:**

- 1) Q1 and Q5 are compulsory.
- 2) Answer ANY TWO questions from Q 2, 3, 4 in Section I.
- 3) Answer ANY TWO questions from Q 6, 7, 8 in Section II.
- 4) Answers to Both the sections to be written in SEPARATE answer books.
- 5) Draw a labeled diagram WHEREVER necessary.

**SECTION - 01**

Q.1) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) What are archaea? Enlist the peculiar features of archaeal cell wall and membrane.
- b) Enlist four diseases caused by Mycoplasma.
- c) What is the role of pilus in the process of conjugation?
- d) Enlist general characteristics of thermophiles.
- e) Define: i) latent period ii) rise period
- f) Briefly describe “icosahedral capsids” with suitable example.

Q.2) Answer the following: (5 Marks X 2 = 10)

- a) What are the distinguishing characteristics of Halobacteria?
- b) With the help of suitable diagram explain “specialized transduction” in detail.

Q.3) Explain the following: (5 Marks X 2 = 10)

- a) Enlist the salient features of actinomycetes with suitable examples.
- b) Explain the role of *cI* gene product and *cro* gene product in lytic cycle of phage  $\lambda$ .

Q.4) Write short notes on the following: (5 Marks X 2 = 10)

- a) Physiological characteristics of fungi and cultivation of fungi.
- b) Plus strand and minus strand RNA viruses.

**SECTION - 02**

Q.5) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) Diagrammatically represent entry of enveloped virus by fusion with plasma membrane.
- b) What is replicative form (RF) of a virus?
- c) Define ectoparasite and endoparasite.
- d) Enlist four characteristics of exotoxins.
- e) Briefly explain Kirby-Bauer for antibiotic susceptibility.
- f) Briefly explain the process of entry of bacterial pathogen in the host cell.

Q.6) Answer the following: (5 Marks X 2 = 10)

- a) Enlist families and genera of plant viruses with suitable examples.
- b) Explain in detail pathogenesis of viral diseases with respect to contact, entry, primary replication and release from the host cell.

Q.7) Explain the following: (5 Marks X 2 = 10)

- a) Viroids
- b) Explain in detail mechanism of action of chemotherapeutic agents that damage cell membrane.

Q.8) Write short notes on the following: (5 Marks X 2 = 10)

- a) Contact transmission of a pathogen
- b) Superantigens

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