

Seat No. : _____

AC-115

April -2018

B.Sc., Sem.-VI

CC-308 : Microbiology

Time : 3 Hours]

[Max. Marks : 70

- Instructions :**
- All questions carry equal marks.
 - Figures at right side indicate the marks.
 - Draw the figures wherever necessary.
 - Mention answer number clearly in the margin.

- Describe the following : (any **two**) **14**
 - General features and structural organization of viruses.
 - Cryptogram system of virus classification and its importance.
 - Primary and secondary cell lines for in vitro cultivation of viruses.
 - Oncogenic DNA and RNA viruses.
- Discuss the following : (any **two**) **14**
 - Important features and replication of phage T₄.
 - Molecular mechanism of lysogeny in Lamda phage with special reference to the role of Lambda repressor and Cro-repressor.
 - Distinguishing features of Tobacco Mosaic Virus (TMV) and major steps in its replication.
 - Important features of HIV and major steps in its replication cycle.
- Explain the following : (any **two**) **14**
 - An outline of diseases caused by fungi in human
 - Secondary metabolites produced by fungi and their importance
 - Various modifications in fungal hyphae and their functions
 - Common laboratory methods and media for cultivation of fungi

4. Describe the following : (any **two**)

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- (a) The Criteria used for fungal classification
- (b) Common methods of asexual reproduction in fungi
- (c) Salient features and economic importance of Ascomycetes
- (d) Salient features and economic importance of Basidiomycetes

5. Answer in **one** or **two** sentences :

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- (a) Give an example of single stranded RNA phage.
 - (b) Give an example of single stranded DNA phage.
 - (c) Give name of a pure cell line of human cancer cells commonly used for cultivation of viruses.
 - (d) What is difference between viroids and prions ?
 - (e) Write names of at least two phages which infect *Escherichia coli*.
 - (f) Give the name of unique base found in T₄ DNA that makes its resistance to host restriction.
 - (g) Write full form of ICNV.
 - (h) Give an economic importance of *Saccharomyces cerevisiae*.
 - (i) Name the causative agent of red rot of sugarcane.
 - (j) Give an importance of *Neurospora crassa*.
 - (k) Name two culture collection centres for fungi.
 - (l) Name anticancer drug produced by fungi as a secondary metabolite.
 - (m) Give the name of any one poisonous mushroom.
 - (n) Give burst size value of T₄ phage.
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