



PBD-003-1013016 Seat No. _____

B. Sc. (Sem. III) (CBCS) Examination

November / December - 2018

**MB - 301 : Microbiology Systematics &
Environmental Microbiology**

(New Course)

Faculty Code : 003

Subject Code : 1013016

Time : **2.30** Hours]

[Total Marks : **70**

- Instructions :** (1) All questions are compulsory.
(2) Figures on right indicates total marks of the question.
(3) Draw neat diagrams wherever necessary.

- 1 (a) Answer the following : 4
(1) Define phylogeny.
(2) Define Metagenomics.
(3) What are Stromatolites ?
(4) What is "evolutionary distance" ?
- (b) Answer in brief : (any **one**) 2
(1) Importance of taxonomy.
(2) Numerical taxonomy.
- (c) Answer in detail : (any **one**) 3
(1) Phenetic Classification.
(2) What are molecular chronometers?
- (d) Write note on : (any **one**) 5
(1) Taxonomic ranks
(2) Characters used in taxonomy.

- 2 (a) Answer the following : 4
- (1) Halophiles are organisms that require _____ concentration.
 - (2) Bacteria such as *Rhizobium* are able to _____ atmospheric nitrogen in association with the roots of _____ plants.
 - (3) Give the name of the disease caused by *Clostridium*.
 - (4) Walls of the genus *Mycobacterium* contain _____ acids in their cell wall.
- (b) Answer in brief : (any **one**) 2
- (1) What are Methanogens? Write down two examples.
 - (2) What are Spirochaetes? Write down two examples.
- (c) Answer in detail : (any **one**) 3
- (1) Describe characters of Actinomycetes.
 - (2) *Bdellovibrio*.
- (d) Write note on : (any **one**) 5
- (1) Endospore forming bacteria
 - (2) Photosynthetic Bacteria.
- 3 (a) Answer the following : 4
- (1) Comment on Hologamy.
 - (2) Comment on Rhizoids.
 - (3) Early blight of potato is caused by _____.
 - (4) Comment on Pseudopodia.
- (b) Answer in brief : (any **one**) 2
- (1) Functions of Cysts
 - (2) Economic importance of Protozoa.
- (c) Answer in detail : (any **one**) 3
- (1) Occurrence of Algae.
 - (2) Economic importance of Algae.

- (d) Write note on : (any **one**) 5
- (1) General characters of fungi.
 - (2) Economic importance of fungi.
- 4 (a) Answer the following : 4
- (1) Study of Virus is known as _____.
 - (2) Give an example of Plant virus.
 - (3) Define capsid.
 - (4) Give an example of Bacteriophage.
- (b) Answer in brief : (any **one**) 2
- (1) What is plaque assay?
 - (2) Structure of TMV.
- (c) Answer in detail : (any **one**) 3
- (1) Write note on cultivation of animal Virus.
 - (2) Prions.
- (d) Write note on : (any **one**) 5
- (1) Explain Lysogeny in detail.
 - (2) Explain Lytic Cycle of Virus.
- 5 (a) Answer the following : 4
- (1) Define Biomagnification.
 - (2) Define Biodegradation.
 - (3) Define Bioremediation.
 - (4) Define Bioleaching.
- (b) Answer in brief : (any **one**) 2
- (1) Metal corrosion.
 - (2) What is air pollution?

- (c) Answer in detail : (any **one**) **3**
- (1) Discuss Biofuel.
 - (2) Discuss bio-deterioration of paper and wood.
- (d) Write note on : (any **one**) **5**
- (1) Write note on Bioplastics.
 - (2) Write note on microbial enhanced oil recovery.
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