



Seat No. _____

HAM-003-1013016
B. Sc. (Sem.-III) (CBCS)
(W.E.F. 2016) Examination
June - 2023
Microbiology : Paper - 301
(Microbial Systematics &
Environmental Microbiology)
(Old Course)

Faculty Code : 003
Subject Code : 1013016

Time : $2\frac{1}{2}$ Hours / Total Marks : 70

- Instructions:** (1) All questions are compulsory.
(2) Right side figures indicate mark of the question.
(3) Draw the figure wherever necessary.
(4) Write answers of all the questions in main answer sheet.

- 1 (A) Answer the following: 4
(1) Define Taxonomy.
(2) Define Species.
(3) What do you mean by dendogram?
(4) _____ is the study of genetic material recovered directly from environmental samples.
- (B) Answer in Brief: (Any **ONE**) 2
(1) What is binomial nomenclature?
(2) What do you mean by metagenomics?
- (C) Answer in Detail: (Any **ONE**) 3
(1) Write a note on Numerical Taxonomy.
(2) Discuss Whittaker's five kingdom concept.
- (D) Write a note on: (Any **ONE**) 5
(1) Major characters used in taxonomy.
(2) Taxonomic ranks of microorganisms.

- 2 (A) Answer the following: 4
- (1) Define Acidophiles.
 - (2) _____ is a dormant, tough, and non-reproductive structure produced by some bacteria under unfavourable condition.
 - (3) Write two examples of dissimilatory sulphate reducing bacteria.
 - (4) Give two examples of gram negative cocci.
- (B) Answer in Brief: (Any **ONE**) 2
- (1) Write two distinguishing features of Bdellovibrio.
 - (2) Write general characteristics of gram negative bacteria.
- (C) Answer in Detail: (Any **ONE**) 3
- (1) Write a note on general features of Endospore formers.
 - (2) Describe characters of Family Enterobacteriaceae.
- (D) Write a note on: (Any **ONE**) 5
- (1) Anoxygenic Photosynthetic Bacteria.
 - (2) General features of Mycobacteria.
- 3 (A) Answer the following: 4
- (1) Define Fungi.
 - (2) Write any two products produced by algae.
 - (3) Enlist modes of reproduction in protozoa.
 - (4) Enlist locomotory organs in protozoa.
- (B) Answer in Brief: (Any **ONE**) 2
- (1) What do you mean by Houstoria?
 - (2) Draw ultra-structure of protozoa.
- (C) Answer in Detail: (Any **ONE**) 3
- (1) Write a note on economic importance of fungi.
 - (2) Write a note on economic Importance of Algae.
- (D) Write a note on: (Any **ONE**) 5
- (1) General Characteristics of Fungi.
 - (2) General Characteristics, Occurrence, & Economic importance of Protozoa.

- 4 (A) Answer the following: 4
- (1) What is Virus?
 - (2) _____ is an abnormal form of a normally harmless protein found in the brain that is responsible a variety of fatal neurodegenerative diseases.
 - (3) Name any two animal viruses.
 - (4) What do you mean by prophage?
- (B) Answer in Brief: (Any **ONE**) 2
- (1) Explain the structure of TMV.
 - (2) What are Viroids?
- (C) Answer in Detail: (Any **ONE**) 3
- (1) Discuss cultivation of animal viruses.
 - (2) Discuss Lysogeny.
- (D) Write a note on: (Any **ONE**) 5
- (1) Lytic cycle of T₄ phage.
 - (2) General Characteristics of viruses.
- 5 (A) Answer the following: 4
- (1) Define Bioremediation.
 - (2) _____ compound or molecule is one that persists in nature for long time and resists degradation.
 - (3) Give four examples of air pollutants.
 - (4) What do you mean by Biomagnification?
- (B) Answer in Brief: (Any **ONE**) 2
- (1) What is bioplastic?
 - (2) Explain Biodeterioration of textile.
- (C) Answer in Detail: (Any **ONE**) 3
- (1) Discuss Biomagnification with example.
 - (2) Explain Biofuels.
- (D) Write a note on: (Any **ONE**) 5
- (1) Bioleaching of metals
 - (2) Air Pollution.
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