

MSc Sem.-1 Examination

402

Bio-Chemistry

February-2025

Time : 2-30 Hours]

[Max. Marks : 70

Instructions:

All questions are compulsory.

Illustrate your answers with neat diagrams wherever necessary.

Question - 1**Write the following**

- i) Discuss in detail about *Rickettsia* [07]
 ii) Discuss about germ theory of disease. [07]

OR

- i) Give a brief account about Koch Postulates [07]
 ii) Enlist the name who support the abiogenesis and explain their experiments [07]

Question - 2**Write the following**

- i) Explain the concept of numerical taxonomy and its importance in modern classification. How does it improve traditional taxonomic methods? [07]
 ii) Status of Microorganisms in the Kingdom: A Brief Overview [07]

OR

- i) Explain the classification system used for viruses. How does viral taxonomy differ from traditional organism classification, and what are the challenges faced in this field? [07]
 ii) Discuss Genetic Approaches Used for Microbial Taxonomy [07]

Question - 3**Write the following**

- i) Write down Tobacco mosaic virus in detail [07]
 ii) Describe Adenovirus with its pathogenicity [07]

OR

- i) Discuss about *Penicillin* Fungi [07]
 ii) Explain about influenza virus. [07]

Question - 4**Write the following**

- i) Describe cell cycle of Prokaryotic cell. [07]
 ii) Explain Normal Growth Curve in brief and discuss Lag and log phases in detail. [07]

OR

- i) Write a note on turbidostate and chemostate [07]
 ii) Describe the effect of environmental factors on microbial growth in brief and explain temperature in detail [07]

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Question - 5

Attempt any seven

[14]

- i) From which microorganism Agar –Agar powder is made
- ii) Who discover the theory of etiology agent for disease
- iii) Which is the reserve food material in Rhizopus
- iv) Define: Septate hyphae
- v) Phylogenetic classification is based on _____.
 - A. Overall similarities
 - B. Habit of plants
 - C. Common evolutionary descendant
 - D. All of these
- vi) ICBN stands for _____.
- vii) What is the difference between Bergy's Manual of Systematic Bacteriology and Bergy's Manual of Determinative Bacteriology?
- viii) What is the current classification of fungi?
- ix) Name the type of bacteria which uses CO_2 as a sole source of carbon for growth.
 - A. Organotrophs
 - B. Heterotrophs
 - C. Autotrophs
 - D. Lithotrophs
- x) Which of the following bacteria does not belong to photolithoautotrophy nutritional class?
 - A. *Thiomargarita namibiensis*
 - B. Purple sulfur bacteria
 - C. Blue-green bacteria
 - D. Green sulfur bacteria
- xi) Name the protein which plays an important role in cell division?
 - A. Actin
 - B. FtsZ
 - C. HSP
 - D. HU