

**PGIS 1059 B-15**  
**M.Sc. Ist Semester(CBCS) Degree Examination**  
**Microbiology**  
**(Fundamentals of Microbiology)**  
**Paper : 1.1 HC**

Time : 3 Hours

Maximum Marks : 80

**Instructions to Candidates:**Answer **All** questions**Section - A**

1. Write brief notes on any **TEN** of the following (10×2=20)
- a) Biogenesis
  - b) Kinetoplast
  - c) Swon neck flask experiment
  - d) Enrichment media
  - e) Phase contrast microscope
  - f) Disinfectant
  - g) Transport media
  - h) Inclusion bodies
  - i) Lyophilization
  - j) ATCC
  - k) Types of rotors
  - l) Phylogenetic tree

**Section - B**Write short notes on any **SIX** of the following (6×5=30)

- 2. Robert Koch's postulates
- 3. Methods of *isolation of microorganisms*.

4. Fluorescent microscopy
5. Special and Differential media
6. Acid fast staining
7. X-ray diffraction crystallography
8. Preservation of microbial cultures.

### Section - C

Answer any **THREE** of the following

**(3×10=30)**

9. Explain the principle and applications of Isoelectric focusing.
  10. Write in detail the working principle and application of TEM.
  11. Discuss different chemical method of Sterilization.
  12. Write in detail the structure of a Prokaryotic cell.
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**PGIS 1060 B-15**  
**M.Sc. Ist Semester (CBCS) Degree Examination**  
**Microbiology**  
**(Microbial Biochemistry and Enzymology)**  
**Paper - 1.2 HC**

Time : 3 Hours

Maximum Marks : 80

**Instructions to Candidates:**

Answer All the sections

**SECTION - A**

Write brief notes on any Ten of the following

(10×2=20)

1. a) Lineweaver-Burk plot
- b) Coenzyme and Cofactors.
- c) Van der Waals force.
- d) Physiological buffer.
- e)  $K_{cat}$
- f) Allosteric enzyme
- g) End product Inhibition.
- h) Disaccharides.
- i) Active site of an enzyme.
- j) Electrostatic force.
- k) Stability of an enzyme
- l) Ion exchange chromatography.

## SECTION - B

Write short notes on any **Six** of the following:

(6×5=30)

2. Units of enzyme activity.
3. Criteria for classification of enzymes.
4. Concepts of acids and bases.
5. Types and importance of isoenzymes.
6. Inhibition of an enzyme activity.
7. Applications of enzyme immobilization.
8. Significance of covalently modulated enzymes.

## SECTION - C

Answer any **Three** questions:

(3×10=30)

9. Discuss the structural and organization of proteins with examples.
  10. Explain Michaelis - Menten equation and add a note on its significance and limitations.
  11. Describe the mechanisms of enzyme action.
  12. Write an account on multienzyme complexes and add a note on their importance.
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**PGIS 1061 B-15**  
**M.Sc. Ist Semester (CBCS) Degree Examination**  
**Microbiology**  
**(Bacteriology)**  
**Paper - 1.3 HC**

Time : 3 Hours

Maximum Marks : 80

*Instructions to Candidates:*

Answer All sections

**Section - A**

I. Write brief notes any **Ten** of the following **(10×2=20)**

- a) Capsule
- b) Phototrophy
- c) Flagella
- d) Mesosomes
- e) Chlamydia
- f) L-forms
- g) Organotrophy.
- h) Gas vesicles
- i) Ribosomes
- j) Barophiles.
- k) Q-fever.
- l) Planes of cell division.

## SECTION - B

- II** Write short notes on any **Six** of the following: (6×5=30)
2. Structure of Magnetosomes and Phycobilisomes.
  3. Structure of bacterial endospores.
  4. Distribution and economic importance of Actinomycetes.
  5. Growth, multiplication and significance of Mycoplasma
  6. Adaptations of thermophiles.
  7. Life cycle of Rickettsia and its significance.
  8. Reproduction and economic importance of cyanobacteria.

## SECTION - C

- III** Answer any **Three** questions: (3×10=30)
9. Give an account of bacterial growth and cell division.
  10. Describe the organization of bacterial genome.
  11. Explain the role of archaebacteria in the evolution of microbial world? Add a note on its economic importance.
  12. Discuss the criteria used in the classification of bacteria according to Bergey's manual of systematic bacteriology.
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**PGIS 1062 B-15**  
**M.Sc. Ist Semester(CBCS)Degree Examination**  
**Microbiology**  
**(Virology & Mycology)**  
**Paper - SC-1.4**

Time : 3 Hours

Maximum Marks : 80

**Instructions to Candidates.**Answer **all** sections**Section - A****I** Write brief notes on any **ten** of the following **(10×2=20)**

- a) Naked capsid
- b) Deoxyvira
- c) Matrix
- d) Bacteriophage
- e) Mycophage
- f) Retrovirus
- g) Insect vectors
- h) Viroids
- i) Papova viruses
- j) Herpes viruses
- k) Dikariyo phase
- l) Heterothalium

## Section-B

II Write short notes on any **six** of the following

(6×5=30)

2. Nomenclature of viruses
3. Classification of Cynophages
4. Translocation of viruses in plants
5. Toga viruses
6. Control of plant viruses transmission
7. Amastigomycotina
8. Ascomycotina

## Section-C

III Answer any **three** questions

(3×10=30)

9. Explain the major contribution and events in the field of virology
  10. Discuss in detail he classification and cultivation of animal viruses
  11. Write a critical account on the oncogenic viruses
  12. Give an account of classification of fungi
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