PGIS 1070   B-14
M.Sc. Ist Semester(CBCS) Degree Examination
Microbiology
(Fundamentals of Microbiology)
Paper - HC-1.1

Time : 3 Hours   Maximum Marks : 80

Instructions to candidates:

Answer all sections

Section-A

I.   Write briefly on any **TEN** of the following   (10x2=20)

   a)   Germ theory of diseases

   b)   Resolving power

   c)   Agar-Agar

   d)   HEPA filters

   e)   Tydallisation

   f)   Edward Jenner

   g)   Dichotomous keys in identification

   h)   Single cell isolation

   i)   Endospore structure

   j)   MTCC

   k)   Beer-lambert's law

   l)   Mitochondria

II. Write short notes on any six of the following $(6\times5=30)$

2. Structure and function of nucleus

3. Comparative study of prokaryotes and eukaryotes

4. Swan necked experiment

5. Contributions of louis Pasteur

6. Methods of disinfection

7. HPLC

8. Micrometry

Section-C

III. Answer any **three** of the following $(3\times10=30)$

9. Write a detailed note on construction and operating principle of SEM microscopy

10. Explain in detail methods of sampling and isolation of microorganism

11. Write a detailed account of three domain classification Add a note on Phylogenetic trees

12. Explain the principle and application of contrifugation methods

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PGIS 1071 B - 14
M.Sc. Ist Semester (CBCS) Degree Examination
Microbiology
(Microbial Biochemistry & Enzymology)
Paper : 1.2 HC
(New)

Time : 3 Hours   Maximum Marks : 80

Instructions to Candidates:

Answer **all** sections

Part - A

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

    a) Vander Waal forces

    b) Electrolyte

    c) Isomers

    d) Enzyme turnover

    e) Unit of enzyme activity and specific activity

    f) Km and Vmax

    g) Mixed inhibition

    h) Membrane bound enzsyme

    i) Gel filtration

    j) Acid based catalysis

    k) X - ray crystallography

    l) Lineweaver Burk plot

Part - B

Write short notes on any **Six** of the following   (6×5=30)

2. Methods of enzyme stabilization

3. Ammonium salt precipitation and dialysis

4. Applications of isoenzymes

5. Properties of Water molecule

6. Michaelis - Menten equation

7. Types and properties of carbohydrates

8. Lock and Key mechanism of enzyme action.

Part - C

Answer any **Three** of the following $(3 \times 10 = 30)$

9. Derive Henderson - Hassalbatch equation of pH and add a note on measurement of pH

10. Explain different types of buffers and write the importance of physiological buffer

11. Discuss enzyme activators and regulators with suitable examples

12. Write a detailed account on types, classification and catalytic properties of enzymes.

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PGIS 1072   B-14
M.Sc. Ist Semester (CBCS) Degree Examination
Microbiology
(Bacteriology)
Paper - HC-1.3
(New)

Time : 3 Hours   Maximum Marks : 80

Instructions to candidates:

Answer All Section

Section-A

I.   Explain/define any **TEN** of the following   (10x2=20)

    a)   Halophiles

    b)   Typhus fever

    c)   S-layer

    d)   G+C ratio

    e)   Fine structure of cyanobaterial cell

    f)   Mycoplasma

    g)   Origin of bacteria

    h)   Classification of Thermus aquaticus

    i)   Ultra-Structure of endospore

    j)   Methanogens

    k)   Planes of cell division

    l)   Mycolic acids

Section - B

II. Write short notes on any six of the following   (6x5=30)

    2. Important genera of suborder corynebacterineae

    3. Life cycle of chlamydia and its significance

    4. Fine structure of flagellum and its functions

    5. Describe the mechanism of bioluminescence and its importance

    6. Epsilonproteobacteria

    7. Reproduction in cyanobacteria

    8. Economical importance of actinomycetes

Section-C

III. Answer any **three** of the following   (3x10=30)

    9. Give an account of diversity of bacteria and their adaptations

   10. Discuss criteria used in the classification of the 2nd edition of Bergey's manual of systematic bacteriology and describe briefly the contents of each volume

   11. Describe the structure and functions of organelles of bacterial cytoplasm

   12. Write the general characteristics of Archaebacteria and their role in the evolution of microbial world

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PGIS 1073   B-14
M.Sc. I Semester(Non - CBCS) Degree Examination
Microbiology
(Virology & Mycology)
Paper - SC-1.4

Time : 3 Hours   Maximum Marks : 80

Instructions to candidates:

Answer All questions

Section-A

I.   Write short notes on any **ten** of the following   **(10x2=20)**

   a)   Capsid

   b)   Sap

   c)   Yeast

   d)   Oncogenic virus

   e)   Viroid

   f)   Vaccines

   g)   Frederick twort

   h)   Prions

   i)   Hepatitis

   j)   Nematodes

   k)   Papoviridae

   l)   TMV

II. Write short notes on any six of the following   (6x5=30)

2. Nucleoprotein and nuclear material

3. Replication of phages

4. Mycophages and phytophages

5. Transmission of insect vectors

6. Distribution of viruses in animals

7. Molecular characterization of Gymnomycota.

8. Life cycle of saccharomyces cerevisiae

Section-C

III Answer any **three** of the following   (3x10=30)

9. Give an account of classification and application of bacteriophages

10. Discuss in detail the isolation, identification and cultivation of cyanophages

11. Write the salient features of division ascomycotina and their classification up to classes giving reasons and examples

12. Discuss the cultivation of animal viruses and their control measures

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