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PGIS-237 A-21
M.Sc. I Semester Degree Examination
MICROBIOLOGY
Fundamentals of Microbiology
Paper : HC - 1.1

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates: Answers **all** sections.

SECTION - A

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

a) Spontaneous generation.

b) Edward Jenner

c) Serial dilution

d) Fluorescent microscope

e) Zeil nelson staining

f) Phenotypic classification

g) Plankton

h) Stab culture

i) Disinfectant

j) Biosafety level 4 (BSL4)

k) Mobile phase

l) NCIM

SECTION - B

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

2. Lyophilzation.

3. Mechanical methods of sterilization.

4. Distribution of microorganisms in air.

5. Good laboratory practices.

6. X-ray diffraction crystallography.

7. Comparison of Prokaryotes and Eukaryotes

8. Mass spectroscopy.

SECTION - C

Answer any **three** of the following : **(3×10=30)**

9. Write detailed account on preparation of different media for Microbiology laboratory.

10. Discuss in detail the working principles of Spectrophotometer.

11. Write a detailed account on physical methods of sterilization.

12. Discuss the working principles of Electron Microscopy.

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PGIS-238 A-21

M.Sc. I Semester (Theory) Degree Examination

MICROBIOLOGY

Biochemistry and Microbial Enzymology

Paper : HC - 1.2

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates: Answer **All** sections.

SECTION - A

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

1. a) Electrolytes

b) Polysaccharides

c) T_3 & T_4

d) Blood clotting

e) Enzyme specificity.

f) K_m and V_{max}.

g) Enzyme turn over.

h) ATPase

i) Enzyme activators.

j) Isoenzymes

k) Acid base catalysis

l) Influence of temp on enzyme activity.

SECTION - B

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

2. Structure and properties of water molecule.

3. Oxidative phosphorylation & substrate level phosphorylation.

4. High energy compounds.

5. Michaelis menton equation.

6. Allosteric enzymes and significance.

7. Glycogenesis and Glycogenolysis.

8. Urea cycle.

SECTION - C

Answer any **Three** of the following : **(3×10=30)**

9. Write the structure, types biological and functional properties of amino acids.

10. Explain indetail the normal and abnormal constituents of blood.

11. Explain Kreb's citric acid cycle adding a note on its energetics.

12. Explain the medical applications and significance of lactate dehydrogenase and creatine phosphokinase.