Roll No. _____ [Total No. of Pages : 2

PGIS-1057 B-17
M.Sc. I Semester Degree Examination
BIOTECHNOLOGY
(General Microbiology)
Paper : HCT - 1.3

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates :

i) Section A has all compulsory questions.

ii) Answer section B and C as per instructions.

SECTION - A

Answer the following. **(10×2=20)**

1. Microbial fuel cells.

2. Mutualism.

3. Probiotics

4. Supramolecules

5. DGGE.

6. Lyophilisation.

7. Cold Sterilization.

8. Axenic cultures.

9. Endospore.

10. Germ Theory of Diseases.

SECTION - B

Answer any **Four** of the following: **(4×6=24)**

11. Discrediting the theory of Spontaneous generation.

12. Preservation of Microbial cultures.

13. Microbial communication system.

14. Growth curve phases.

15. Morphology and structure of viruses.

16. Mechanism of differential staining.

SECTION - C

Answer any **Three** of the following: **(3×12=36)**

17. Give a detailed account of contributions of scientists for the development of microbiology.

18. Describe in detail the various methods of Sterilization.

19. Explain in detail structural organization and life cycle of Bacteriophage.

20. Write an essay on microbe-microbe interactions.

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PGIS-1056 B-17
M.Sc. I Semester Degree Examination
BIOTECHNOLOGY
(Cell and Development Biology)
Paper : HCT-1.2

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates :

i) Section 'A' has all compulsory questions

ii) Answer 'B' and 'C' sections as per instructions

SECTION-A

I. Answer the following in brief **(10×2=20)**

1. Plasmodesmata

2. Tonoplast

3. Nuclear envelope

4. Interphase

5. Acrosome

6. Histones

7. Cyclin A

8. Anueploidy

9. Murine leukemia virus

10. Fibroblast cells

SECTION-B

II. Answer any four of the following **(4×6=24)**

11. Structure of cilia

12. Chloroplast

13. Self incompatibility

14. Cell sizes

15. Antioncogenes

16. Microsomes

SECTION-C

III. Answer any three of the following **(3×12=36)**

17. Describe the structure and functions of endoplasmic reticulum

18. Discuss in detail about organization of eukaryotic chromosomes

19. Explain the muscular organization and mention its functions

20. Write an account on morphogenetic movements of cell during embryonic development.

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PGIS-1055 B-17
M.Sc. Ist Semester(CBCS) Degree Examination
BIOTECHNOLOGY
(General Biochemistry)
Paper : HCT - 1.1

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates :

i) Section A has all compulsory questions.

ii) Answer section B and C as per instructions.

Section -A

Answer the following. **(10×2=20)**

1. Acidic pH.

2. Buffer.

3. COOH-group.

4. Ligand.

5. Coenzyme.

6. Cellulose.

7. B-DNA.

8. Glycoproteins.

9. Photorespiration.

10. Essential amino acids.

Section - B

Answer any **Four** of the following: **(4×6=24)**

11. Explain the Handerson-Hasselbasch's equation.

12. Write briefly on hydrophobic interactions.

13. Elaborate on the secondary structure of proteins.

14. Write a note on specific activity of enzymes.

15. Illustrate the structure of cholesterol.

16. Give an overview of metabolism.

Section - C

Answer any **Three** of the following: **(3×12=36)**

17. Explain the laws of thermodynamics. Write briefly on Entropy.

18. Discuss on the Michaelis-Menton Kinetics. Add a note on enzyme inhibition.

19. Write an account on the classification and functional significance of polysaccharides.

20. Describe the electron-transport system. With a brief note on ATP-Synthesis.

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PGIS-1058 B-17

M.Sc. Ist Semester Degree Examination

BIOTECHNOLOGY

(Bioseparation and Bioanalytical Techniques)

Paper : SCT -1.2

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates :

i) Section 'A' has all compulsory questions

ii) Answer 'B' and 'C' sections as per instructions

Section-A

I. Answer the following in brief **(10x2=20)**

1) Ion Exchange resins

2) 2-D electrophoresis

3) FPLC

4) Flocculation.

5) Mobile phase

6) Ligand

7) Ultra centrifugation

8) API electrospray

9) Centripetal force

10) Zymograms

Section-B

II. Answer any four of the following **(4x6=24)**

11. Types of cell immobilization

12. Cerenkov radiation

13. Gel filtration chromatography

14. Separation characteristics of proteins and enzymes

15. Staining procedures for proteins and nucleic acids

16. Determination of molecular weight by sedimentation velocity

Section-C

III. Answer any three of the following (3×12=36)

17. Describe the mechanism and principles involved in the membrane based separation process

18. Give an account of the affinity and their layer chromatography

19. Write an account on the theory and applications of polyacrylamide and agarose gel electrophoresis

20. Enumerate the process involved in the characterization of proteins using MALDI-TOF

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