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# PGIS 1065 B-14
## M.Sc. I Semester(CBCS) Degree Examination
## Biotechnology
## (Biochemistry)
## Paper - HCT1.1

Time : 3 Hours Maximum Marks : 80

*Instructions to candidates:*

1. *Section A has all compulsory questions*
2. *Answer B and C sectiions as per instructions*

### Section-A

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

**1** Hydrophobicity

**2.** Chymotrypsin

**3.** Enzyme inhibitors

**4.** Membrane lipids

**5.** Co-transport

**6.** CAM

**7.** Alkaloids

**8.** Peptides

**9.** Polysaccharides

**10.** Phenolics

## Section-B

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

**11.** Water soluble vitamins

**12.** Oxidative phosphorylations

**13.** Membrane bound proteins

**14.** Single substrate enzymes

**15.** Characterization of expressed proteins

**16.** bimolecular hierarchy

## Section-C

Answer any three of the following **(3x12=36)**

**17.** Describe the evolution of protein structure and add a note on covalent structure of proteins

**18.** Write an account on sugars and lipids

**19.** Explain the sequencing of nucleotides and nucleosides

**20.** Give an account of elucidation of metabolic pathways with a note on signals and secondary messengers

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# PGIS 1069 B-14
## M.Sc. Ist Semester (CBCS) Degree Examination
## Biotechnology
## (Bio Analytical techniques)
## Paper - SCT : 1.1

Time : 3 Hours Maximum Marks : 80

*Instructions to candidates:*

1. *Section A has all compulsory questions*
2. *Answer B and C sections as per instructions*

### SECTION-A

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

1) API-electrospray

2) Transilluminator

3) 2D electrophoresis

4) X-ray diffraction

5) Iso electric focusing

6) centrifugal force

7) Affinity chromatography

8) NMR

9) Viscosity

10) Phase contrast microscopy

## SECTION - B

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

**11.** Immunoelectrophoresis

**12.** Lyophilization

**13.** Scanning electron microscope

**14.** Microcentrifuge

**15.** Radiation dosimetry

**16.** Zymograms

## SECTION - C

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

**17.** Describe in detail the technique involved in the protein crystallization

**18.** Explain any one technique of chromatography used for the separation of macromolecules

**19.** How do you determine the molecular weight of the biomolecules by using sedimentation coefficient in centrifugation technique

**20.** What is autoradiography and explain in detail about the radiotracer techniques involved.

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# PGIS 1066 B-14
## M.Sc. Ist Semester (CBCS) Degree Examination
## Biotechnology
## (Cell and Development Biology)
## Paper -HCT-1.2

Time : 3 Hours Maximum Marks : 80

***Instructions to candidates:***

1. *Section A has all compulsory questions*
2. *Answer B and C sections as per instructions*

### Section-A

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

**1.** Flagella.

**2.** Nuclear envelope

**3.** Histones

**4.** Acrosome

**5.** Heterosis

**6.** Amphimixes

**7.** Benign tumor

**8.** Kinetochore

**9.** Euchromatin

**10.** senescence

## Section-B

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

**11.** Explain biogenesis of chloroplast

**12.** Describe the molecular features of telomeres

**13.** Explain the structure of female gamete

**14.** Write a short note on lysosomes

**15.** Describe endosperm development in plant

**16.** Explain plasmodesmata

## Section-C

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

**17.** "Cell is a morphological and functional unit of organism" substantiate the statement

**18.** Discuss the transport of nutrients across the cell membrane

**19.** Explain the structure and functions of golgs complex

**20.** Describe the organization of muscles and add a note on its function

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# PGIS 1067 B-14
## M.Sc. Ist Semester (CBCS) Degree Examination
## BioTechnology
## (MicroBiology)
## Paper - HCT - 1.3

Time : 3 Hours Maximum Marks : 80

***Instructions to Candidates:***

1. *Section A has all **compulsory** questions.*
2. *Answer **B** and **C Sections** as per instructions.*

### Section - A

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

**1.** Edward Jenner

**2.** Capsule

**3.** Streaking method

**4.** Counting of bacteria

**5.** Psychrophiles

**6.** Methanococcus

**7.** Protocooperation

**8.** Phylogeny

**9.** Synchronus growth

**10.** Lag phase

## Section - B

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

**11.** Write a note on differential staining technique

**12.** Explain contributions of Robert Koch

**13.** Describe isolation of microorganisms

**14.** Explain growth curve

**15.** Describe replication of viruses

**16.** Explain domain and kingdom concept in classifying microorganisms

## Section - C

Answer any **Three** of the following

**17.** Write a detailed account on branches of microbiology

**18.** Discuss in detail the typical structure of yeast

**19.** Describe in detail various types of microbial interactions in nature

**20.** Give an account of 16s- rDNA sequencing and ribosomal database project.

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