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PGIS 1058 B-15

M.Sc. Ist Semester 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' as per instructions.

SECTION - A

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

1. Diffusion

2. Flash evaporation

3. PMR

4. Ion exchange

5. Cerenkov radiation.

6. 2D electrophoresis

7. Confocal microscopy.

8. Biomolecules

9. FPLC

10. Nucleic acids.

SECTION - B

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

11. Fluorescence Microscopy

12. Plasma emission spectroscopy

13. Pulsed field electrophoresis

14. Anto radiography.

15. Enzyme and cell immobilization techniques.

16. Transmission electron microscope.

SECTION - C

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

17. Give an brief account on the characterization of biological macromolecules.

18. Explain the chromatographic methods used for macro molecules separation.

19. Write a note on differential and density gradient centrifugation.

20. Discuss the radio tracer techniques and add a note on clinical applications.

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PGIS 1056 B - 15

M.Sc Ist Semester Degree Examination

Biotechnology

(Cell and Developmental 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'** as per instructions.

SECTION - A

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

1. Desmodesmata
2. Apical meristem
3. Polyspermy
4. Actin filament
5. Acrosome
6. Nucleolus
7. Endoderm
8. Benign tumor
9. Intrinsic proteins
10. Nuclear Sap

SECTION - B

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

11. Explain structure and functions of Flagella

12. Describe the fluid mosaic model of cell membrane

13. Explain various cell theories

14. Write short notes on gene therapy in cancer.

15. Describe chromosomal relaxation

16. Write a short note on plasmodesmata

SECTION - C

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

17. Describe the structure and functions of Golgi complex

18. Write a detailed account on cellular recognition junctions and adhesions

19. Explain the process of regeneration in salamander limb

20. Write an account on the biochemical changes during fertilization.

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PGIS 1057 B-15
M.Sc. Ist Semester 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' as per instructions.

SECTION - A

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

1. Anotonie Van leeuwenhoek

2. Mycolic acid

3. Lipopolysaccharides.

4. Exponential phase

5. Axenic culture

6. Archaea

7. Prebiotic

8. Commensalism

9. Symbiosis

10. Predation

SECTION - B

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

11. Explain about swan necked flask experiment of louis pasteur

12. Write in detail on type of culture media.

13. Write an account on Growth curve of micro organisms.

14. Describe microbe - microbe interactions in brief

15. Discuss about ultra structure of Eubacteria.

16. Write a note on Ribosomal database project(RDB)

SECTION - C

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

17. Explain in detail about the Biosystematics in classification of bacteria.

18. Write a detailed note on bio - geochemical cycles involved between microbes and environment.

19. Discuss in detail about the various branches of microbiology and add a note on it.

20. Write a detail account on the plant microbes interactions with suitable examples.

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PGIS 1055 B-15
M.Sc. Ist Semester Degree Examination
Biotechnology
(Biochemistry)
Paper - HCT - 1.1

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates.

1) Section 'A' has Compulsory questions.
2) Answer B and C sections as per instructions.

Section - A

Answer in brief. **(10×2=20)**

1. Covalent bond.
2. Amides.
3. Western blot.
4. K cat
5. β conformation.
6. Myoglobin.
7. Fat soluble vitamins.
8. Rubisco
9. ATPase
10. Shikonin.

Section - B

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

11. Covalent structure of proteins.

12. Competitive enzyme inhibition.

13. Fatty acid synthesis.

14. Regulation of Kreb's cycle.

15. Note on chymotrypsin

16. Over view of central dogma.

Section - C

Answer any **three** questions. Each question carries **12** marks. (3×12=36)

17. Explain higher order structure of proteins.

18. Discuss the differences in C3, C4 and CAM pathway?

19. Write an account on the building blocks of nucleic acids.

20. Explain the chemistry of chlorophyll and heme.
