PGIS-1057 B-18
M.Sc. I Semester (CBCS) Degree Examination
BIOTECHNOLOGY
(General Microbiology)
Paper - HCT 1.3

Time : 3 Hours   Maximum Marks : 80

Instructions to Candidates:

    1.   Section A has all Compulsory questions.

    2.   Answer Section B and C as per instructions .

SECTION-A

(10×2=20)

Answer the following:

1.   Spontaneous Generation

2.   Negative Staining

3.   Slant culture

4.   Generation Time

5.   Trace elements

6.   Synchronous Growth

7.   Probiotics

8.   Methanococcus

9.   Capsule

10. Spread plate

SECTION-B

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

11. Edward Jenner.

12. Specialised Culture Media.

13. Growth factors.

14. Microbial Fuel Cells.

15. Preservation of cultures.

16. Numerical taxonomy.

SECTION-C

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

17. Explain in detail Plant-microbe interactions with examples.

18. Write an account on contributions of Robert Koch.

19. Describe in detail various methods of Sterilization.

20. Explain ultramicroscopic structure of Yeast.

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PGIS- 1056 B-18
M.Sc. I 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' Sections as per instructions.

SECTION-A

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

    1.   Cell membrane

    2.   Pinocytosis

    3.   Tissue

    4.   Nucleolus

    5.   Benign tumor

    6.   Kinetochore

    7.   Meristem

    8.   Cisternae

    9.   Biomolecules

    10.   Collagen

SECTION-B

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

    11.   Cell theory

    12.   Lysosomes

    13.   Euchromatin

    14.   Structure of male gamate

    15.   Endoplasmic reticulum

    16.   Shoot apical meristem.

SECTION-C

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

17. "Mitochondria" is the power house of cell. Justify the statement.

18. Cell is the morpholic & functional unit of organism substantiate the statement.

19. Describe the molecular biology of cancer cell.

20. Write a detailed account on embryonic development in frog.

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PGIS- 1058 B-18
M.Sc. I Semester Degree Examination
BIOTECHNOLOGY
(Bioseparation and Bioanalytical 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

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

1. Flocculation
2. Void volume and elution volume
3. Isoelectric point
4. Spin column
5. RCF
6. PFGE
7. Zymogram
8. Half life of radioisotope
9. Coomassie Brilliant Blue
10. Electro spray ionisation

SECTION-B

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

11. Membrane filtration
12. Affinity chromatography
13. RP-HPLC
14. 2D-Gel electrophoresis
15. Density gradient centrifugation
16. Enzyme immobilisation techniques.

SECTION-C

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

17. Give an account of methods for extraction of proteins.

18. Describe the principles methodology and applications of molecular exclusion chromatography.

19. Explain the construction and working of analytical ultracentrifuge. Add a note on its applications.

20. Describe the methods for measurement of radioactivity.

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PGIS- 1055 B-18
M.Sc. I Semester Degree Examination
BIOTECHNOLOGY
(General Biochemistry)
Paper - HCT 1.1

Time : 3 Hours   Maximum Marks : 80

Instructions to Candidates:

   1.   Section 'A' has all compulsory questions.

   2.   Answer 'B' anc 'C' Sections as per instructions.

SECTION -A

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

   1.   Myoglobin

   2.   Entropy

   3.   ATP

   4.   R Nase A

   5.   Glycoproteins.

   6.   Hasselbalch equation

   7.   Quaternary structure of proteins

   8.   Heteropolysaccharides

   9.   Co-enzymes

   10.   Non covalent interactions.

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

11.   Electrostatic interactions

12.   Nucleic acid sequencing

13.   CAM PATHWAY

14.   Michaelis- Menten Kinetics

15.   Allostaric and cavalant modifications.

16.   Mechanism of enzyme action.

SECTION -C

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

17.   Describe in detail the Kref's cycle and their regulations in metabolism.

18.   Give an account on the different forms of DNA and add a note on their physical properties.

19.   Discuss in detail the laws of thermodynamics and add a note on Entropy and Gibb's free energy.

20.   Write on detailed account on the electron transport system in oxidative phosphorylation.

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