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FIRST SEMESTER M.Sc. (CBCSS) REGULAR/SUPPLEMENTARY DEGREE EXAMINATION, NOVEMBER 2022

General Biotechnology

GBT 1C 03—MICROBIOLOGY

(2019 Admission onwards)

Time : Three Hours   Maximum Weightage : 30

Section A

Answer any **four** *questions.*
Each question carries a weightage 2.

1. Atomic force microscopy.

2. Stationary phase in bacterial growth.

3. Hanging drop technique.

4. Lysogenic cycle.

5. Rhizosphere.

6. Free living nitrogen fixers.

7. Activated sludge process.

(4 × 2 = 8 weightage)

Section B

Answer any **four** *questions.*
Each question carries a weightage 3.

8. Pasteur's contributions.

9. Scanning electron microscopy.

10. Principle and working of autoclave.

11. Cultivation of fungi.

12. Plant-microbe interactions.

13. Pathogenesis of syphilis.

14. Mechanisms of action of antibiotics.

(4 × 3 = 12 weightage)

Section C

Answer any **two** *questions.*
Each question carries a weightage 5.

15. Discuss the methods of chemical sterilization.

16. Discuss light microscopy.

17. Discuss the principles of bacterial taxonomy.

18. Explain Krebs cycle.

(2 × 5 = 10 weightage)

FIRST SEMESTER M.Sc. DEGREE (C.B.C.S.S.) [REGULAR /SUPPLEMENTARY] EXAMINATION, NOVEMBER 2022

General Biotechnology

GBT 1C 02—BIOMOLECULES

(2019 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

Section A

Answer any **four** *questions.*

Each question carries a weightage of 2.

1. Explain the Henderson-Hassel Balch equation

2. What is entropy ? Explain.

3. Explain the structure of cellulose.

4. Explain the beta sheet of protein.

5. What is unsaturated fatty acid ? Give two examples.

6. What is a nucleotide ? Give an example.

7. What is NMR spectroscopy ? Explain its uses.

(4 × 2 = 8 weightage)

Section B

Answer any **four** *questions.*

Each question carries a weightage of 3.

8. Explain Molecular logic of living system.

9. Give an account of water-soluble vitamins.

10. What is serotonin ? Explain its functions.

11. What is electrophoresis ? Give an account of different types of electrophoresis.

12. What are sphingolipids ? Describe its cellular functions.

13. Explain structure of collagen with a diagram.

14. What are heteropolysaccharides ? Give two examples with their functions.

Turn over

(Pages : 2)

Name.....................................

Reg. No..............................

FIRST SEMESTER M.Sc. DEGREE (C.B.C.S.S.) [REGULAR / SUPPLEMENTARY] EXAMINATION, NOVEMBER 2022

General Biotechnology

GBT 1C 01—CELL BIOLOGY

(2019 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

Section A

Answer any **four** *questions.*

Each question carries a weightage of 2.

1. Prions.

2. F1 particle.

3. PTS.

4. Microbodies.

5. Glyoxysome.

6. Translocon.

7. Schleiden and Schwann.

(4 × 2 = 8 weightage)

Section B

Answer any **four** *questions.*

Each question carries a weightage of 3.

8. Mechanism of action of cilia.

9. Scanning electron microscope.

10. Replication Check point.

11. Rb gene.

12. Extrinsic pathway of apoptosis.

FIRST SEMESTER M.Sc. DEGREE (C.B.C.S.S.) [REGULAR /SUPPLEMENTARY] EXAMINATION, NOVEMBER 2022

General Biotechnology

GBT 1C 02—BIOMOLECULES

(2019 Admission onwards)

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Answer any **four** *questions.*

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1. Explain the Henderson-Hassel Balch equation

2. What is entropy ? Explain.

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4. Explain the beta sheet of protein.

5. What is unsaturated fatty acid ? Give two examples.

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$(4 \times 2 = 8 \text{ weightage})$

Section B

Answer any **four** *questions.*

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8. Explain Molecular logic of living system.

9. Give an account of water-soluble vitamins.

10. What is serotonin ? Explain its functions.

11. What is electrophoresis ? Give an account of different types of electrophoresis.

12. What are sphingolipids ? Describe its cellular functions.

13. Explain structure of collagen with a diagram.

14. What are heteropolysaccharides ? Give two examples with their functions.

Turn over

(4 × 3 = 12 weightage)

Section C

Answer any **two** *questions.*

Each question carries a weightage of 5.

15. Write an essay on amino acid classification.

16. Describe Clinical relevance of eicosanoids in biological system.

17. Write essay on female sex hormones.

18. Draw and explain Ramachandran diagram.

(2 × 5 = 10 weightage)

FIRST SEMESTER M.Sc. DEGREE (C.B.C.S.S.) [REGULAR / SUPPLEMENTARY] EXAMINATION, NOVEMBER 2022

General Biotechnology

GBT 1C 01—CELL BIOLOGY

(2019 Admission onwards)

Time : Three Hours   Maximum : 30 Weightage

Section A

Answer any **four** *questions.*
Each question carries a weightage of 2.

1. Prions.

2. F1 particle.

3. PTS.

4. Microbodies.

5. Glyoxysome.

6. Translocon.

7. Schleiden and Schwann.

(4 × 2 = 8 weightage)

Section B

Answer any **four** *questions.*
Each question carries a weightage of 3.

8. Mechanism of action of cilia.

9. Scanning electron microscope.

10. Replication Check point.

11. Rb gene.

12. Extrinsic pathway of apoptosis.

13. Clathrin coats.

14. Difference between prokaryotes and eukaryotes.

(4 × 3 = 12 weightage)

Section C

Answer any **two** *questions.*

Each question carries a weightage of 5.

15. Describe the mechanism of action through cAMP as second messenger.

16. Describe the function of a Mitochondria.

17. Describe the mechanisms involved in formation and fusion of vesicles.

18. Describe the composition of extra cellular matrix.

(2 × 5 = 10 weightage)