C 23344 (Pages : 2) Name.....

Reg. No.....

SECOND SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2022

(CBCSS)

General Biotechnology

GBT 2C 04—BIOSTATISTICS AND BIOINFORMATICS

(2019 Admission onwards)

Time : Three Hours Maximum : 30 Weightage

General Instructions

1. *In cases where choices are provided, students can attend* **all** *questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *The instruction if any, to attend a minimum number of questions from each sub section / sub part / sub division may be ignored.*
4. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Section A

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

1. Define population and sample.
2. What is a secondary data ?
3. Define Range.
4. Write a short note on string variables in BASIC.
5. What is a flow chart ?
6. What is a database ?
7. What is internet ?

(4 × 2 = 8 weightage)

Section B

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

8. Write the differences between bar diagram and histogram.
9. Briefly write on measures of skewness.
10. Briefly write on regression analysis.
11. Explain the logical operators available in C.
12. Briefly write on graphical tools in MS-EXCEL for presentation of data.
13. Write a note on types of BLAST.
14. What is phylogenetic analysis ?

(4 × 3 = 12 weightage)

Section C

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

15. Explain Mean, Median and Mode.
16. Discuss on ANOVA and its applications.
17. Discuss on DBMS and its advantages over the traditional file processing system.
18. Discuss on internet and its applications.

(2 × 5 = 10 weightage)

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SECOND SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2022

(CBCSS)

General Biotechnology

GBT 2C 03—ENVIRONMENTAL BIOTECHNOLOGY

(2019 Admission onwards)

Time : Three Hours Maximum : 30 Weightage

General Instructions

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4. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Section A

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

1. List out the types of pollution.
2. Write reasons of water crisis in India.
3. Write examples of greenhouse gasses.
4. Comment on ozone depletion.
5. Define Xenobiotics.
6. Define biomedical waste.
7. Explain PHA.

(4 × 2 = 8 weightage)

Section B

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

8. Discuss the role of community in Environment Conservation.
9. Write brief note on Anaerobic digestion.
10. Define Bioremediation.
11. Differentiate between BOD and COD.
12. Explain the principle behind oxidation pond.
13. What are the types of Bio pesticides used?
14. Define the cause for ozone depletion.

(4 × 3 = 12 weightage)

Section C

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

15. What is global warming ? Explain the causes and effects of greenhouse gasses.
16. Write a note on bio fertilizer and explain the benefits and limitations of bio fertilizer.
17. Explain the sources and types of solid waste with example.
18. Explain the concept of green patent.

(2 × 5 = 10 weightage)

C 23342 (Pages : 2) Name.....

Reg. No.....

SECOND SEMESTER M.Sc. (CBCSS) DEGREE [REGULAR/SUPPLEMENTARY] EXAMINATION, APRIL 2022

General Biotechnology

GBT 2C 02—MOLECULAR BIOLOGY

(2019 Admission onwards)

Time : Three Hours Maximum : 30 Weightage

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Section A

Answer any **four** *questions.*

Each question carries weightage of 2.

Write notes on :

1. Termination in prokaryotes.
2. DNA methylation.
3. Initiator *t*-RNA.
4. Reverse transcription.
5. FISH.
6. Micro RNAs.
7. Attenuation.

(4 × 2 = 8 weightage)

Section B

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

Write notes on :

8. DNA methylation and its significance.
9. Post- translational splicing.
10. Lac- operon.
11. Expression vectors.
12. Rho factors.
13. Capping.
14. Hershy-chase experiment.

(4 × 3 = 12 weightage)

Section C

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

15. Discuss the role different RNAs in protein synthesis.
16. Describe the semi concervative method of DNA replication.
17. Give an account of post transcriptional modifications.
18. Explain the mechanism if recombination with reference to the Holliday model.

(2 × 5 = 10 weightage)

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Reg. No.....

SECOND SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2022

(CBCSS)

General Biotechnology

GBT 2C 01—METABOLISM AND BASIC ENZYMOLOGY

(2019 Admission onwards)

Time : Three Hours Maximum : 30 Weightage

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Section A

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

1. What are high energy phosphate compounds ?
2. What are the uses of NADPH ?
3. What is Glycerophospholipids ?
4. Define Carnitine shuttle.
5. What is the difference between a purine and pyrimidine ?
6. What is feedback inhibition ?
7. What are isoenzymes give examples ?

(4 × 2 = 8 weightage)

Turn over

Section B

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

8. Define Glycogenolysis. Write the reactions of this process.
9. What is the structure and function of "electron transport chain" in chloroplast ?
10. What are the steps involved in urea cycle ?
11. What are the properties and functions of lipids ?
12. What are the significance of Glyoxylate Cycle ?
13. What are the differences between reversible and irreversible inhibitors ?
14. What are the general properties of allosteric enzymes ?

(4 × 3 = 12 weightage)

Section C

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

15. What is Glycogenesis ? Describe the steps and state under what conditions glycogenesis would be promoted in the body ?
16. Describe different steps in oxidation of fatty acids.
17. Explain Fischer's lock and key hypothesis.
18. List out the medical applications of enzymes.

(2 × 5 = 10 weightage)

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SECOND SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2022

(CBCSS)

General Biotechnology

GBT 2C 03—ENVIRONMENTAL BIOTECHNOLOGY

(2019 Admission onwards)

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Section A

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2. Write reasons of water crisis in India.
3. Write examples of greenhouse gasses.
4. Comment on ozone depletion.
5. Define Xenobiotics.
6. Define biomedical waste.
7. Explain PHA.

(4 × 2 = 8 weightage)

Section B

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

8. Discuss the role of community in Environment Conservation.
9. Write brief note on Anaerobic digestion.
10. Define Bioremediation.
11. Differentiate between BOD and COD.
12. Explain the principle behind oxidation pond.
13. What are the types of Bio pesticides used?
14. Define the cause for ozone depletion.

(4 × 3 = 12 weightage)

Section C

Answer any **two** *questions.*
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16. Write a note on bio fertilizer and explain the benefits and limitations of bio fertilizer.
17. Explain the sources and types of solid waste with example.
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7. Explain PHA.

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Section B

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