K19U 2451

Reg. No. : .....

Name : .....

III Semester B.Sc. Degree (CBCSS-Reg./Sup./Imp.)
Examination, November - 2019
(2014 Admn. Onwards)
COMPLEMENTARY COURSE IN BIOCHEMISTRY
3C03 BCH : BIOCHEMISTRY-III

Time : 3 Hours Max. Marks : 32

SECTION-A

Answer **All** 5 questions. Each question carries **1** mark. **(5×1=5)**

1. What is meant by entropy?
2. What is meant by equilibrium constant of a reaction?
3. Identify the first irreversible step of glycolysis.
4. Give the reaction catalyzed by 'galactokinase'.
5. List the four nucleotides found in our genetic material.

SECTION-B

(Short answers)

Answer any **4** questions out of **6.** Each question carries **2** marks. **(4×2=8)**

6. List any two phosphorylated compounds and their functions.
7. Explain 'Standard free energy change'.
8. Give a brief account on entry of fructose into glycolysis.
9. What is gluconeogenesis?
10. What is the reaction catalyzed by glutamate dehydrogenase? How is it important?
11. Identify the hormones regulating glycogen metabolism.

P.T.O.

SECTION-C

(Short essay)

Answer any **3** questions out of **5**. Each question carries **3** marks. **(3×3=9)**

12. How does ATP aid in transport of molecules across a concentration gradient? Explain.
13. How does glycogen serve as energy reserve during starvation? Explain.
14. Why are transamination reactions significant in biological nitrogen management?
15. Explain the importance of urea cycle and its regulation.
16. Give a short essay on the breakdown of purines.

SECTION-D

(Long Essays)

Answer any **2** questions out of **4**. Each question carries **5** marks. **(2×5=10)**

17. Explain the steps and key regulators of glyogenesis.
18. Discuss the components and energetic of citric acid cycle.
19. Give a detailed overview on biosynthesis of non-essential amino acids.
20. Why salvage pathway is considered a recycle pathway for nucleic acids? Explain in detail.

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III Semester B.A. Degree (CBCSS-Reg./Sup./Imp.)
Examination, November - 2019
(2014 Admn. Onwards)
GENERAL COURSE IN BIOTECHNOLOGY
3A 11 BTC : METHODOLOGY AND PERSPECTIVE OF SCIENCE

Time : 3 Hours Max. Marks : 40

SECTION-A

Write about each of the following in 2 or 3 sentences. Each question carries **1** mark. **(6×1=6)**

1. Ad-hoc hypothesis
2. Legal aspects of plagiarism
3. AGE
4. False negative finding.
5. Give a comparative description on type I and type II errors.
6. SDS PAGE

SECTION-B

Write short notes on any **3** questions. Each question carries **2** marks. **(3×2=6)**

7. Principles of pH meter.
8. Scientific temper.
9. MSDS
10. HEPA filter

P.T.O.

SECTION-C

Write short notes on any **Three**. Each question carries **4** marks. **(3×4=12)**

11. Role of statistics in data interpretation.

12. Double blind study

13. Real time PCR.

14. Depositories of scientific information.

15. Give an account on significance of virtual testing.

SECTION-D

Write an essay on any **Two** questions. Each question carries **8** marks. **(2×8=16)**

16. Discuss in detail about major doctrines of epistemology.

17. Give a detailed account on molecular identification of microbes.

18. Describe in detail about ethics in scientific research.

19. Explain the various bias in research.

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III Semester B.Sc. Degree (CBCSS-Reg./Sup./Imp.) Examination, November - 2019

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GENERAL COURSE IN BIOTECHNOLOGY

3A 12 BTC : INFORMATICS AND INTRODUCTION TO BIOINFORMATICS

Time : 3 Hours Max. Marks : 40

SECTION-A

Write about each of the following in 2 or 3 sentence. Each question carries **1** mark. **(6×1=6)**

1. What is microarray?
2. What is FASTA?
3. What is neural networks?
4. What is VRL?
5. What is phylogeny?
6. What is GenBank?

SECTION-B

Write short notes on any **Three** of the following. Each question carries **2** marks. **(3×2=6)**

7. What is Clustal W?
8. What is PDB?
9. What is BRNET?
10. What is NHGRI?

P.T.O.

SECTION-C

Write short essay on any **Three** of the following. Each question carries **4** marks. **(3×4=12)**

11. What is Genome Annotation?

12. What is the significance of Evalue in BLAST result and how it is different from that of the score?

13. What is 2D PAGE?

14. What are the major features of Uniprot?

15. Explain the technology behind ATM.

SECTION-D

Write essay on any **Two** of the following. Each question carries **8** marks. **(2×8=16)**

16. Explain different steps in protein sequencing.

17. Discuss about various cyber issues

18. Explain about biological data bases?

19. Describe Nucleicacid Sequencing.

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III Semester B.Sc. Degree (CBCSS-Reg./Sup./Imp.) Examination, November - 2019

(2014 Admn. Onwards)

CORE COURSE IN BIOTECHNOLOGY

3B03 BTC : IMMUNOLOGY

Time : 3 Hours Max. Marks : 40

SECTION-A

Write about each of the following in 2 or 3 sentences. Each question carries **1** mark. **(6×1=6)**

1. HSC
2. C reactive protein
3. Epitopes
4. Immunogens
5. HAT selection
6. Hinge region

SECTION-B

Write short notes on any **3** questions. Each question carries **2** marks. **(3×2=6)**

7. Structure and formation of secretory Ig A
8. Abzymes
9. Role of incomplete antibodies in agglutination reaction
10. Lectin pathway

P.T.O.

SECTION-C

Write short essay on any **3** question. Each question carries **4** marks.**(3×4=12)**

11. Explain in detail about memory B cells

12. Give a detail account on cytokines.

13. Explain the thymic selection process.

14. Give an account on apoptosis and necrosis with diagram.

15. Explain the pathways of antigen presentation

SECTION-D

Write an essay on any **2** questions. Each question carries **8** marks.**(2×8=16)**

16. Explain DTH in detail with treatment.

17. Give a detail account on ELISA and its application

18. Explain the structure and function of secondary lymphoid organs.

19. Explain systemic autoimmune diseases.

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III Semester B.Sc. Degree (CBCSS-Reg./Sup./Imp.) Examination, November - 2019

(2014 Admn. Onwards)

CORE COURSE IN BIOTECHNOLOGY

3B 04 BTC : PLANT PHYSIOLOGY

Time : 3 Hours Max. Marks : 40

SECTION-A

Write about each of the following in **2** or **3** sentences. Each question carries **1** mark. **(6×1=6)**

1. Root pressure theory
2. Phototropism
3. Applications of vernalization
4. Essential and non-essential elements
5. Capillary water
6. Mass flow hypothesis

SECTION-B

Write short notes on any **3** of the following. Each question carries **2** marks. **(3×2=6)**

7. Transpiration pull theory
8. Apoplast and symplast pathway
9. Cryptochromes
10. Role of cytokinin

P.T.O.

SECTION-C

Write short essay on any **3** of the following. Each question carries **4** marks. **(3×4=12)**

11. Structure of phytochromes
12. Methods of plant growth measurements.
13. Methods of breaking seed dormancy.
14. Temperature stress
15. Tropic movements of plants

SECTION-D

Write essay on any **2** of the following. Each question carries **8** marks. **(2×8=16)**

16. Explain the process of seed germination
17. Give a detailed account on theories on mechanism of opening and closing of stomata.
18. Describe the physiological role of gibberlins and abscissic acid.
19. Explain the significance of seed dormancy and also the causes and mechanisms involved in breaking seed dormancy.

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III Semester B.Sc.Degree (CBCSS- Reg./Sup./Imp.)

Examination, November-2019

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COMPLEMENTARY COURSE IN MICROBIOLOGY

3C03 MCB: APPLIED MICROBIOLOGY-1

Time : 3 Hours **SECTION-A** Max. Marks : 32

(Answer **All** the **Five** questions in a single word) **(5×1=5)**

1. Name the enzyme used in cheese production.
2. Rice water stool is the major symptom of_____.
3. The temperature used for Flash method of milk pasteurization is_____.
4. _____ is a flower used in beer production for flavour development.
5. Sugar and salt help to preserve food by reducing the_____.

SECTION-B

Answer briefly on any **Four** of the following. Comment on the following: **(4×2=8)**

6. Case hardening.
7. GRAS.
8. Freeze drying.
9. Must.
10. Leavening.
11. False yeasts.

P.T.O.

SECTION-C

(Write short notes on any **Three** of the following) **(3×3=9)**

12. Pasteurization.

13. Yoghurt.

14. Sulfuring.

15. Listeriosis.

16. Bacteria important in food microbiology.

SECTION-D

Answer any **Two** of the following in detail. **(2×5=10)**

17. Brewing.

18. Preservation using high temperature.

19. Any two food and water borne viral diseases.

20. Factors affecting the growth of microbes in food.
