K20U 1804

Reg. No. : .....

Name : .....

III Semester B.Sc. Degree CBCSS (OBE) – Regular Examination, November 2020
(2019 Admission Only)
COMPLEMENTARY ELECTIVE COURSE IN BIOCHEMISTRY
3C03 BCH : Biochemistry – III

Time : 3 Hours

Max. Marks : 32

SECTION – A
(Very Short Answer)

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

1. Name two high energy compounds.
2. The acceptor of $-NH_2$ group and the newly formed amino acid during transamination is _____ and _____
3. Write the site of fatty acid oxidation and biosynthesis within a cell.
4. Give any four substrates which can undergo gluconeogenesis.
5. What is the cause of Lesch-Nyhan syndrome ?

SECTION – B
(Short Answer)

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

6. Define redox potential.
7. Write a short note on oxidative deamination of amino acids.
8. List out the enzymes required to convert pyruvate to glucose specific to gluconeogenesis.
9. Define P/O ratio.
10. Represent the sources of individual atoms in a purine ring.
11. How are long chain fatty acids transported to mitochondria for beta oxidation ?

P.T.O.

SECTION – C
(Short Essay)

Answer **any 3** questions. **Each** question carries **3** marks : **(3×3=9)**

12. Write down the energetics of citric acid cycle.
13. Calculate the total ATP yield upon complete oxidation of palmitic acid.
14. Write a short essay on the complexes involved in electron transport chain.
15. Brief on the hormonal regulation of glycogen metabolism.
16. Write the steps involved in the beta oxidation of fatty acids.

SECTION – D
(Essay)

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

17. Give a detailed account of the glycolytic cycle.
18. Explain the cytoplasmic system of fatty acid biosynthesis.
19. Describe the biosynthesis of inosine monophosphate.
20. Give an account of the biosynthesis of glycine.

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K20U 1806

Reg. No. : .....

Name : .....

III Semester B.Sc. Degree CBCSS (OBE) – Regular Examination, November 2020

(2019 Admission Only)

GENERAL AWARENESS COURSE IN BIOTECHNOLOGY

3A01 BTC : Biophysics

Time : 3 Hours Max. Marks : 40

PART – A

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

1. Define osmotic pressure.
2. What is dispersed phase ?
3. Define Enthalpy.
4. What is peptide bond ?
5. What is dialysis ?
6. Define hydrogen bond.

PART – B

Write notes on **any six** of the following. **Each** question carries **2** marks. **(6×2=12)**

7. Ramachandran plot.
8. Write note on action potential and membrane potential.
9. DNA supercoiling.
10. Explain about tertiary structure of protein.
11. Describe energy of activation.

P.T.O.

12. Lyophilic and lyophobic colloids.

13. Give the biological importance of diffusion.

14. What is reverse osmosis ?

PART – C

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

15. Explain the structure of t-RNA

16. Describe adsorption and its biological importance.

17. Describe Hoogsteen base pairing.

18. Describe about energy of activation.

19. Explain Fluid mosaic model.

20. Explain forces stabilizing protein structure.

PART – D

Write an essay on **any two** of the following. **Each** question carries **5** marks. **(2×5=10)**

21. Describe about laws of thermodynamics.

22. Explain biological importance of colloids.

23. Describe DNA-protein interaction.

24. Explain classification of aminoacids.

K20U 1807

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III Semester B.Sc. Degree CBCSS (OBE) – Regular Examination, November 2020

(2019 Admission Only)

General Awareness Course in Biotechnology

3A02BTC : BASIC CONCEPTS OF ECOLOGY

Time : 3 Hours Max. Marks : 40

PART – A

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

1. Edaphic factors
2. Edge effect
3. Food web
4. Autecology
5. Ecotypes
6. Biomes.

PART – B

Write notes on **any six** of the following. **Each** question carries **2** marks. **(6×2=12)**

7. Differentiate between Habitat and Niche.
8. What is species diversity ?
9. Energy flow in an ecosystem.
10. Huffaker's experiment of metapopulation.
11. R and K selection.
12. What are the major types of aquatic ecosystem ?
13. Climax community.
14. Phosphorus cycle with diagram.

P.T.O.

PART – C

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

15. What are the main principles of ecology ?

16. What are ecological pyramid ? Mention its types.

17. What are the major threats to biodiversity ?

18. Write about the environmental indicators.

19. What are the characteristics of population ecology ?

20. What is the main focus of conservation biology ?

PART – D

Write essay on **any two** of the following. **Each** question carries **5** marks. **(2×5=10)**

21. Explain the biotic and abiotic factors affecting the distribution and interactions of species.

22. Explain in detail the structure and functions of ecosystem.

23. What is succession ? Explain mechanism of succession in detail.

24. Detail biosphere reserves in India.

K20U 1808

Reg. No. : .....

Name : .....

III Semester B.Sc. Degree CBCSS (OBE) – Regular Examination, November 2020
(2019 Admission Only)
CORE COURSE IN BIOTECHNOLOGY
3B03 BTC : Immunology

Time : 3 Hours Max. Marks : 40

SECTION – A

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

1. Super antigens
2. Alum
3. Class switching
4. Antibody avidity
5. Graft rejection
6. Attenuation.

SECTION – B

Write notes on **any six** of the following. **Each** question carries **2** marks : **(6×2=12)**

7. Tumor specific transplantation antigens.
8. Immunotolerance.
9. Opsonins.
10. Antigen Presenting Cells.
11. CTL.

P.T.O.

12. HAT selection medium.

13. Macrophages.

14. M cells.

SECTION – C

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

15. Briefly describe the formation of ternary complex.

16. Explain Fab and Fc fragment of antibody.

17. Explain ADCC.

18. Describe clinical uses of monoclonal antibodies.

19. Explain the role of spleen in immune function.

20. Bonds involved in antigen-antibody interaction.

SECTION – D

Write essay on **any two** of the following. The question carries **5** marks : **(2×5=10)**

21. Give a detailed account on structure of Class I and Class II MHC.

22. Explain in detail about antibody mediated cytotoxic hypersensitivity.

23. Explain organ specific autoimmune diseases.

24. Explain in detail about the stages of graft rejection.

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K20U 1841

Reg. No. : .....

Name : .....

III Semester B.Sc. Degree CBCSS (OBE) – Regular Examination, November 2020
(2019 Admission Only)
COMPLEMENTARY ELECTIVE COURSE IN MICROBIOLOGY
3C03MCB : Applied Microbiology – 1

Time : 3 Hours Max. Marks : 32

PART – A

Write about **each** of the following in **2** or **3** sentences. **Each** question carries **1** mark. **(5×1=5)**

1. Afla toxin
2. Canning
3. Asepsis
4. Sodium benzoate
5. Bacterial food intoxication.

PART – B

Write notes on or discuss **any four** of the following. **Each** question carries **2** marks. **(4×2=8)**

6. Preservation of food at low temperature.
7. Smoking as a method of food preservation.
8. Leuconostoc.
9. Endospore forming foodborne pathogen.
10. Cholera.

PART – C

Write notes on or discuss **any three** of the following. **Each** question carries **3** marks. **(3×3=9)**

11. Preservation off food by additives.
12. Pasteurisation.

P.T.O.

13. Salmonella gastrointestinal infections
14. Listeriosis
15. Bread fermentation.

PART – D

Write notes on or discuss **any two** of the following. **Each** question carries **5** marks. **(2×5=10)**

16. Sources of contamination of Food and factors affecting microbial growth in food.
17. Vinegar Fermentation.
18. Elaborate different Food infections and intoxications.
19. Cheese and Yoghurt production.
