

**FOURTH SEMESTER P.G. DEGREE EXAMINATION, APRIL 2021**

(CCSS)

M.Sc. Biochemistry

BCH 4E 04—CLINICAL AND DIAGNOSTIC BIOCHEMISTRY

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A***Answer all questions.**Each question carries 2 marks.*

1. Give the difference between accuracy and precision.
2. How CSF is collected from the body ?
3. Give the normal value of blood sugar and serum cholesterol.
4. Comment on therapeutic index.
5. What is the renal threshold of glucose ?
6. Write note on lactose intolerance.
7. Mention the metabolic defect associated with alkaptonuria.
8. Name different types of tyrosinemia.
9. What are the clinical signs of phenylketonuria ?
10. Write the biochemical defect and clinical signs of MSUD.
11. Name different types of anemia.
12. What is Hematuria ? Give its significance.
13. Comment on muscular dystrophy.
14. Name the different types of jaundice.
15. Comment on porphyrins.
16. Write short note on albinism.

**Turn over**

17. Give the uses of hematology counter.
18. What is hepatic coma ?
19. Mention the biochemical defect associated with Hemophilia.
20. Comment on thrombocytosis.

(20 × 2 = 40 marks)

### Part B

*Answer any five questions.  
Each question carries 8 marks.*

21. Describe the different methods for collection and preservation of clinical samples.
22. Discuss liver function tests.
23. Describe diseases associated with lipoprotein metabolism.
24. Elaborate on diagnostic enzymes.
25. Write note on auto analysers.
26. Describe the following :
  - a) Diabetes Mellitus ; and
  - b) Glucose tolerance test.
27. Discuss any *four* disorders of hormonal imbalance.

(5 × 8 = 40 marks)

**FOURTH SEMESTER P.G. DEGREE EXAMINATION, APRIL 2021**

(CCSS)

M.Sc. Biochemistry

BCH 4E 03—INDUSTRIAL ENZYMES

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Section A***Answer all questions in 2 or 3 sentences.**Each question carries 2 marks.*

1. Outline the chemical nature of enzymes.
2. Define nucleases. Give one example.
3. Give any two therapeutic applications of enzymes.
4. What is enzyme optimization ?
5. Name two enzymes of plant origin, that is used in industry.
6. Outline strain improvement in enzyme technology ?
7. Mention the different types of carriers used in enzyme immobilization.
8. Outline the role of adsorption in enzyme immobilization.
9. What are cross-linked enzyme aggregates ?
10. Comment on modified enzymes.
11. Define batch reactors.
12. What are solid bed enzyme reactors ?
13. Outline protein engineering in industrial enzymes.
14. Define competitive enzyme inhibition.
15. Give an example of uncompetitive enzyme inhibition.
16. Name two commercial enzyme inhibitors.
17. What are the sources of enzyme inhibitors ?
18. Define enzyme technology.

**Turn over**

19. What are modified enzymes ?
20. Outline the economic importance of industrial enzymes.

(20 × 2 = 40 marks)

### Section B

*Answer any five of the following.*

*Each question carries 8 marks.*

21. Describe the industrial applications of enzymes.
22. Discuss the factors that influence the optimum activity of an enzyme.
23. Discuss the natural sources of enzymes with examples.
24. Explain the effect of microenvironment on activity of immobilized enzymes.
25. Outline the methods of enzyme immobilization.
26. Elaborate the classification of commercial enzyme inhibitors.
27. Outline the applications of enzyme inhibitors in food industry and agriculture.

(5 × 8 = 40 marks)

**FOURTH SEMESTER M.Sc. DEGREE (REGULAR) EXAMINATION  
MARCH 2021**

(CBCSS)

Biochemistry

BCH 4E 03—CANCER BIOLOGY

(2019 Admissions)

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

**Part A (Short Answers)**

*Answer any four questions.*

*Weightage 2 each.*

1. Comment on the tumor cells in lymphatic system.
2. How does tumor virus transform an animal virus ?
3. State the significance of telomeres.
4. Compare oncogenes and tumor suppressor genes.
5. Give two characteristics of Herpes virus.
6. Name any *two* tumor markers.
7. List out any *two* targets of caspases.

(4 × 2 = 8 weightage)

**Part B (Short Essays)**

*Answer any four questions.*

*Weightage 3 each.*

8. Give a brief note on bcl-2 family.
9. Write a short note on hepatitis B virus.

**Turn over**

10. State the significance of MMPs in pathological conditions.
11. Briefly explain the different theories of carcinogenesis.
12. How does diet influence cancer ?
13. List out the physical agents that can cause cancer.
14. Brief on role of mitochondria in apoptosis.

(4 × 3 = 12 weightage)

**Part C (Long Essays)**

*Answer any two questions.*

*Weightage 5 each.*

15. Describe the different types of chemotherapeutic agents.
16. Elaborate the significance of apoptosis in cancer and cancer therapy.
17. Detail the characteristics of SV40. Papilloma viruses and adenoviruses.
18. Describe the mechanism of metastasis.

(2 × 5 = 10 weightage)

**FOURTH SEMESTER M.Sc. DEGREE (REGULAR) EXAMINATION  
MARCH 2021**

(CBCSS)

Biochemistry

BCH 4E 01—BIOCHEMICAL TOXICOLOGY

(2019 Admissions)

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

**Part A (Short Answers)**

*Answer any four questions.*

*Weightage 2 each.*

1. How synergism is different from antagonism ?
2. Write any four Phase I enzymes.
3. Name four compounds that cause genetic toxicity.
4. What do you mean by lethal synthesis ?
5. Write down the differences between acute and chronic exposure.
6. What is the principle and procedure of dominant lethal test ?
7. What are the different types of developmental toxicity ?

(4 × 2 = 8 weightage)

**Part B (Short Essays)**

*Answer any four questions.*

*Weightage 3 each.*

8. Write note on the mechanism of acetaminophen toxicity.
9. Briefly explain different types of detoxification processes.

Turn over

10. What is meant by dose-response relationship ?
11. Write on the biochemical mechanism of cisplatin nephrotoxicity.
12. What is the mechanism of lead toxicity ?
13. Give an account of how dietary habits influence chemical toxicity.
14. What are the different specific modes of toxic actions ?

(4 × 3 = 12 weightage)

**Part C (Long Essays)**

*Answer any two questions.*

*Weightage 5 each.*

15. Elaborate on the aim, principle and procedure of any three genetic toxicity tests.
16. Write in detail about the types of metabolic changes and excretion of toxicants.
17. Describe the toxicity mechanism and health effects of arsenic, mercury and cadmium.
18. Describe mechanism of immunotoxicity.

(2 × 5 = 10 weightage)