S–1309

Sub. Code
23MBC1C1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

First Semester

Biochemistry

BASICS OF BIOCHEMISTRY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What are Dextrin?

2. Define invert sugar.

3. Mention the importance of leukotrienes.

4. What are glycoproteins?

5. Define motif.

6. What is the role of tubulin?

7. State the biological uses of collagen.

8. Define linking number.

9. Mention the importance of intermediate filaments.

10. What is cot curve?

Part B (5 × 5 = 25)

Answer **all** the questions choosing either (a) or (b).

11. (a) Describe glycoproteins.

Or

(b) Detail on homopolysaccharides.

12. (a) Give the structure and functions of eicosanoids and prostaglandins.

Or

(b) Describe phospholipids.

13. (a) Elaborate on molecular chaperons.

Or

(b) Discuss on the forces involved in protein structure.

14. (a) Write about actin and tubulin.

Or

(b) Describe the types of DNA.

15. (a) Explain the structure of triple helix and quadruplex DNA.

Or

(b) Write about DNA Supercoiling.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss on plant and bacterial cell wall polysaccharides.

17. Write about Lipoprotein – classification structure and transport.

18. Elaborate on cytoskeleton and its importance

19. How do you classify aminoacids?

20. State the structure and role of nucleotides in cellular communication.

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S–1310

Sub. Code
23MBC1C2

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

First Semester

Biochemistry

BIOCHEMICAL AND MOLECULAR BIOLOGY TECHNIQUES

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Cryoprotectant.
2. TEM.
3. Resolving phase.
4. Reverse HPLC.
5. CBB.
6. Ampholyte.
7. IR.
8. Chemiluminescence.
9. GM counter.
10. Centrifugal force.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) What are the different homogenization techniques?

Or

(b) What are the applications of phase contrast and fluorescent microscope?

12. (a) What is the mechanism of chiral chromatography?

Or

(b) Write a note on GCMS?

13. (a) Explain isoelectric focusing.

Or

(b) Brief on the mechanism of 2D electrophoresis.

14. (a) Write about the basic laws of light absorption.

Or

(b) What is the principle of atomic absorption spectroscopy?

15. (a) Describe the biological hazards of radiation.

Or

(b) Explain the mechanism of density gradient centrifugation.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. What is cell culture? Explain in detail about various cell culture techniques.

17. Give a detailed answer on the overview of HPLC.

18. What is agarose gel electrophoresis? Illustrate its mechanism in detail.

19. Explain in detail the principles and applications of UV-visible spectroscopy.

20. Write about the detection and measurement of radioactivity.

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S–1311

Sub. Code
23MBC1C3

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

First Semester

Biochemistry

PHYSIOLOGY AND CELL BIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Necrosis.

2. Name cell cycle check points.

3. State the function of hCG.

4. What is the role of Oxytocin?

5. Recall the formed elements present in the blood.

6. What is the composition of CSF?

7. Define Sarcomere.

8. Why are axon terminal called as biological transducers?

9. Define Rod and cones.

10. Explain TRH.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Give a detailed account of mitosis.

Or

(b) Classify the types of tissues and its level of organization with labelled diagram.

12. (a) List out the different phases of menstrual cycle and discuss.

Or

(b) Examine how fat is digested and absorbed.

13. (a) Explain the Bohr effect.

Or

(b) Outline on the photochemical reactions in retina of eye.

14. (a) Discuss the transport of respiratory gases in our body.

Or

(b) Draw a diagram on structure of neuron and explain the features of nerve impulse.

15. (a) List the function of gonads. How do products of gonadal function differ in males and females.

Or

(b) Describe briefly the biological functions of glucocorticoids.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Elaborate on cell death mechanism.

17. Generalize on the fertility issues in infertile couples and its treatment methods.

18. Enumerate upon blood clotting factors and describe the biochemistry of coagulation of blood.

19. Explain the role of gated channels that control ion permeability of neurons.

20. (i) Describe mechanism of action and feedback regulation of anterior pituitary hormones.

    (ii) Explain the mechanism of action of parathyroid hormones.

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S–1312

Sub. Code
23MBC1E1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

First Semester

Biochemistry

Elective — MICROBIOLOGY AND IMMUNOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define complex media.

2. List the measurement of microorganisms

3. Write a note on chemostat.

4. What is pasteurization?

5. Define Aflatoxin.

6. Name some food Poisoning microorganisms.

7. Define minimal inhibitory concentration.

8. Define Antiviral drugs.

9. What are haptens?

10. Define macrophage.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Explain the practical application of bacterial growth curve.

Or

(b) Narrate the classification of microbes, lytic cycle and lysogeny.

12. (a) Write an account of spoilages of milk and milk products.

Or

(b) Explain the modern methods of food preservation techniques?

13. (a) List out any two food pathogens, cause and their symptoms.

Or

(b) Give an account of molecular taxonomy of bacteria.

14. (a) List out and compare the antiviral drug mechanism of action.

Or

(b) Classify the different types of grafts.

15. (a) Compare B cells and T cells.

Or

(b) Explain antigenicity, immunogenicity, antigenic determinants and haptens.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Describe the lytic cycle of bacteriophage.

17. Narrate the different tradition and modern methods of food preservation.

18. Explain food intoxication & food infection and write the difference?

19. Explain the mechanism of action of antibiotics.

20. Illustrate the basic properties and components on classical complement pathway.

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S–1313

Sub. Code
23MBC2C1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Second Semester

Biochemistry

ENZYMOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Outline apoenzyme.

2. Infer stereo specificity.

3. Explain Isoelectric point.

4. Justify the role of ammonium sulphate in enzyme purification.

5. Define Kcat.

6. When we can apply the Line weaver burk plots?

7. Expand SDR.

8. What is ping pong mechanism?

9. Explain enzyme entrapment.

10. List any two industrially important enzymes.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Classify the enzyme specificity.

Or

(b) Evaluate the role played by Acid Base catalysis.

12. (a) Justify the importance of Isoelectric focusing.

Or

(b) How will you measure the enzyme activity?

13. (a) How will you apply Lineweaver-Burk plot in research?

Or

(b) Compare the competitive and non-competitive inhibition.

14. (a) Discuss the features of sigmoidal kinetics.

Or

(b) Explain the Double displacement reactions.

15. (a) Illustrate any two designer enzymes.

Or

(b) List the application on Industrial enzymes.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Decipher the IUB system of enzyme classification with example.

17. Discuss the methods of isolation and purification of enzyme.

18. Analyze the MM equation by using a single substrate reaction.

19. Explain the sequential and concerted feedback inhibition.

20. Elaborate the Immobilization of enzymes.

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S–1314

Sub. Code
23MBC2C2

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Second Semester

Biochemistry

CELLULAR METABOLISM

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Anaerobic glycolysis.

2. Fructosuria.

3. Unsaturated fatty acids.

4. β oxidation.

5. Pyrimidine nucleotides.

6. Salvage pathway.

7. Non-essential amino acids.

8. Ketogenic amino acids.

9. Sanfilippo syndrome.

10. Maroteaux-Lamy syndrome.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Write a note on mucopolysaccharides.

Or

(b) Give an account on the metabolism of glycogen and its regulation.

12. (a) Differentiate between Sphingolipid and sphingomyelin.

Or

(b) Explain the biosynthesis of prostaglandins.

13. (a) Write a short note on salvage pathway.

Or

(b) What is degradation of purine and pyrimidine nucleotides?

14. (a) Write a brief note on the biosynthesis of spermine and spermidine.

Or

(b) Explain the role and significance of glutamine and asparagine synthetase.

15. (a) What are sanfilippo and maroteaux-lamy syndromes?

Or

(b) What is the principle of oxidation of cysteine and its significance?

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain blood glucose homeostasis and the role of hormones.

17. Write a note on the biosynthesis of saturated and unsaturated fatty acids.

18. Write short notes on the role of ribonucleotide reductase and its regulation.

19. Write short notes on the formation of acetate from leucine and aromatic amino acids.

20. Explain in brief the oxidation and reduction of inorganic sulphur compounds by microbes and plants.

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S–1315

Sub. Code
23MBC2C3

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Second Semester

Biochemistry

CLINICAL BIOCHEMISTRY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is thombocytopenia?

2. What are prognosis and diagnosis?

3. Write on anti-diabetic drugs.

4. Give information on gestational DM.

5. What is the role of pseudocholine esterase?

6. Write a note on enzymes linked with bone diseases.

7. Enlist the tests to assess liver functions.

8. What are CRP and inflammatory markers?

9. Explain on glomerulonephritis and urinary calculi.

10. List out the pituitary disorders.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe collection and preservation of biological samples.

Or

(b) Discuss about the haemolytic and iron deficiency disorders.

12. (a) Summarize on GTT.

Or

(b) Give an account on Atherosclerosis.

13. (a) Write about enzymes in diagnostics.

Or

(b) Elucidate on amniocentesis in detail.

14. (a) Illustrate elaborately on inflammatory markers.

Or

(b) Give an account on fatty liver and ferritins.

15. (a) Explain in detail on diagnosis of thyroid disorders.

Or

(b) Discuss about the adrenal disorders.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Elaborate on the biochemical investigations using biological specimens.

17. Explain in detail on pathology and complications of diabetes.

18. Discuss about the enzymes markers in diagnostics and treatments.

19. Write in detail about acute phase proteins and its significance.

20. Describe in detail on hormonal disorders.

S–1316	Sub. Code 23MBC2E1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Second Semester

Biochemistry

Elective — ENERGY AND DRUG METABOLISM

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Why ATP is called an energy-rich compound?

2. Mention the role of redox system in oxidative phosphorylation.

3. Define chemi-osmotic theory.

4. What is the importance of oxidative phosphorylation?

5. What is the function of the control of C3?

6. What is the mechanism of degradation of starch?

7. Why it is called energy generating phase of glycolysis?

8. Define anaplerotic reaction with suitable examples.

9. What are the enzymes involved in TCA cycle?

10. What are the factors affecting the activities of xenobiotic enzymes?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Define :

(i) Oxidases

(ii) Hydroperoxidases with suitable examples.

Or

(b) What are the enzymes and coenzymes involved in biological oxidation?

12. (a) What is the mechanism of control of oxidative phosphorylation?

Or

(b) Illustrate the structure and function of ATP.

13. (a) What are the steps involved in Light reaction?

Or

(b) Write down the steps involved in Calvin cycle.

14. (a) Write a short note on anaplerotic reactions occur in TCA cycle.

Or

(b) Describe the biological role of malate-aspartate shuttle.

15. (a) Interpret the structure and biosynthesis of PAPS.

Or

(b) Mention the mode of action of xenobiotic enzymes.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain redox potential. How do you calculate free energy?

17. Elaborate the role of complex protein in electron transport chain.

18. Explain the steps involved in synthesis and degradation of starch.

19. Write down the detailed steps of glycolysis.

20. Explain the hydroxylation and oxidation process of xenobiotics metabolism.

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S–1317

Sub. Code
23MBC2E2

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Second Semester

Biochemistry

Elective — NUTRITIONAL BIOCHEMISTRY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define nutrition and BMR.

2. Write on lactose intolerance.

3. Elaborate on role of dietary fibre.

4. Give information on protein sparing action.

5. What are vitamins? Give its types with examples.

6. Write a note on minerals and mention its types with examples.

7. Write about protein malnutrition.

8. Explain on enrichment and fortification.

9. What is atherosclerosis?

10. Explain obesity and ulcer.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe factors affecting BMR.

Or

(b) Discuss about the SDA and its significance.

12. (a) Summarize on EFA.

Or

(b) Give an account on EAA.

13. (a) Write about classification of minerals and give significance of any three minerals.

Or

(b) Elucidate on classification and functions of any three vitamins.

14. (a) Illustrate elaborately on diseases associated with fat soluble vitamins.

Or

(b) Give an account on deficiency diseases of any three B-complex vitamins.

15. (a) Explain in detail on atherosclerosis and jaundice.

Or

(b) Discuss about the aetiology, signs and treatment of covid-19.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Elaborate on the nutrition during lactation and pregnancy.

17. Explain in detail all biological functions of macronutrients.

18. Discuss about the role of vitamin B complex as coenzymes.

19. Describe on mineral associated diseases.

20. Write in detail about typhoid/malaria.

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S–1318

Sub. Code
23MBC2S1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Second Semester

Biochemistry

FUNDAMENTAL OF MEDICAL LABORATORY TECHNOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Name any two codes of ethics for lab technician.

2. Define Biosafety.

3. Show the purpose of laboratory register.

4. What do you mean by chemical poisoning?

5. Define the term Phlebotomy.

6. Expand the term NABL.

7. State the function of water bath.

8. Define p^H.

9. Recall the term disinfection.

10. What is a Biohazard?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Categorize the methods of sterilization.

Or

(b) List out the methods to dispose the specimens and infected materials.

12. (a) Select the various cleaning methods of glassware's.

Or

(b) Use and care of an incubator.

13. (a) Demonstrate the collection of blood for laboratory analysis.

Or

(b) Outline the preparation of a laboratory report. What are precision and reference values?

14. (a) Assume you set a Bio-Medical laboratory according to safety priority and laboratory biosafety guideline and write the necessary requirements.

Or

(b) List out the responsibilities of a lab technician in maintenance of analyser.

15. (a) Write function of quality assurance. Describe the essential elements of quality assurance programme.

Or

(b) Use of Automation in clinical biochemical laboratory.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Evaluate the safety precautions and first aid treatment for hours, wounds and handling pathogens.

17. Compose an essay on the working principle and uses of autoclave.

18. Elaborate on the basic working of a light microscope.

19. (a) Write the requirements and process of blood collection for the haematology assessment of a patient.

    (b) Make a note on the processing steps of the blood plasma and serum separation from collected blood sample.

    (c) Write the process of blood film preparation and Leishman staining on it. Write the precautions need to be taken by analyst during blood film preparation and staining.

20. Classify the types of analyzers used in clinical biochemistry laboratory.

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S–1319

Sub. Code
23MBC3C1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Third Semester

Biochemistry

INDUSTRIAL MICROBIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Flagella.

2. What are microbes use chemical industry?

3. What is fermenter?

4. What is steam filtration?

5. Define: Industry enzymes.

6. What is fermentation?

7. What is food preservation?

8. Define Antibiotics explems.

9. Define Mycorrhizae.

10. What is Organic matter?

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Discuss the role of pharmaceutical industry.

Or

(b) What are the fungi? Write some salient features of fungi.

12. (a) Write about microbial fermentation process?

Or

(b) Discuss about the types of culture medium.

13. (a) Write about the production of ethanol.

Or

(b) Describe the vitamin B12.

14. (a) Discuss about the dairy products.

Or

(b) Describe about food preservation physical methods.

15. (a) Write role of agriculture microbiology.

Or

(b) Write short notes

(i) Azospirillium

(ii) BGA

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the types and characteristics of industry used microbes.

17. What is fermentor? Design and operation and application.

18. Write about the production of citric acid.

19. Explain about the food preservation chemical methods.

20. Write about the biofetilizers production and its application.

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S–1320

Sub. Code
23MBC3C2

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Third Semester

Biochemistry

MOLECULAR BIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is meant by split genes?

2. Define diploids.

3. What is the role of telomerase?

4. Define retroposons.

5. Write about CPG island.

6. What are genetic code?

7. Define operon.

8. What is gene expression?

9. Define Spliceosome.

10. What are Golgi?

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Write a short note on Mendel's laws of incomplete dominance.

Or

(b) Explain Eukaryotic chromosome structure.

12. (a) Write a note on DNA repair mechanisms.

Or

(b) Discuss the Holliday model.

13. (a) Write about Rho-dependent transcription.

Or

(b) Discuss wobble hypothesis.

14. (a) Write a short note on lac operon.

Or

(b) List out the process of gene expression.

15. (a) Explain about protein degradation.

Or

(b) Describe the RNA splicing.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the genome organisation c-values paradox.

17. Write a detail note on Mutations and its types.

18. Describe Eukaryotic transcription.

19. Write an account on gel - shift assays.

20. Discuss on genome editing.

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S–1321

Sub. Code
23MBC3C3

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Third Semester

Biochemistry

GENE EDITING CELL AND GENE THERAPY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define gene editing.

2. Expand CRISPR.

3. Comment Ex vivo gene therapy.

4. Write short note on expression of transgene.

5. Summarize microinjection.

6. Explain Retrovirus vector system.

7. Infer totipotent stem cells.

8. Write any two properties of stem cells.

9. What are genetically modified stem cells?

10. Comment cell replacement therapies.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Explain programmable nucleases for gene editing.

Or

(b) Write a short note on transcription activator-like effector nucleases.

12. (a) Describe types of gene therapy.

Or

(b) Explain ethical and legal issues of gene therapy.

13. (a) Discuss about gene therapy applications.

Or

(b) Write a short note on gene therapy for cancer.

14. (a) Explain Embryonic stem cells.

Or

(b) Describe chemically induced pluripotent stem cells.

15. (a) Explain regulalory and ethical considerations of gene therapy.

Or

(b) Discuss and detail about assessing human stem cell safety.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Describe and detail study about DNA repair mechanisms.

17. Explain immunological response to the gene therapy.

18. Discuss viral vectors for gene therapy.

19. Explain three dimensional bioprinting using stem cells.

20. Describe technological challenges towards development of pluripotent stem cell-based cell replacement therapies.

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S–1322

Sub. Code
23MBC3C4

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025.

Third Semester

Biochemistry

BIOSTATISTICS AND DATA SCIENCE

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is secondary data?

2. Define median.

3. What is regression?

4. Note on mean deviation.

5. What is test for mean?

6. Define stratified sample.

7. What is students 't' test?

8. Define test for correlation.

9. Note on Machine Learning Algorithms.

10. What is Big Data?

Part B

$(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Write short notes on primary data.

Or

(b) Explain mean with an example.

12. (a) Write short notes on correlation.

Or

(b) Explain Standard Deviation briefly.

13. (a) How will you do sampling? Explain in short.

Or

(b) Describe briefly about standard error mean.

14. (a) Explain in short about ANOVA.

Or

(b) What is Chi-square test?

15. (a) Note on Artificial Intelligence.

Or

(b) Describe Data Science in short.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss the different forms of diagrams and graphs related to biological studies.

17. Explain in detail about correlation and regression.

18. Describe sample distribution and standard error in detail.

19. Explain Chi-square test for goodness of a non independence of attributes in detail.

20. List out the applications of AI in medical, health and pharma industries.

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S–1323

Sub. Code
23MBC3E1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Third Semester

Biochemistry

Elective – MOLECULAR BASICS OF DISEASES AND THERAPEUTIC STRATEGIES

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define neuropathy

2. What is meant by Type II diabetes

3. Define Tumorigenesis

4. What is Proto-oncogenesis

5. What you meant by memory?

6. Define hallmarks of cancers.

7. List out the diagnosis of kidney.

8. Define glomerulonephritis.

9. What is cardiac remodeling.

10. Define heart failure.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Explain briefly about Nutritional care of diabetes.

Or

(b) Write a short note on Management of type-I and type-II diabetes.

12. (a) Explain – radiotherapy, chemotherapy.

Or

(b) Discuss Personalized medicine.

13. (a) Explain about neuronal network.

Or

(b) Discuss Brain diseases.

14. (a) Write a short note on nephritic syndrome.

Or

(b) Short note on diagnosis of kidney disease.

15. (a) Discuss about hypertrophy of heart.

Or

(b) Explain Molecular changes during cardiac remodeling.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Describe cellular and molecular mechanism of development of diabetes.

17. Discuss the Molecular techniques in cancer diagnosis.

18. Write a detail note on Alzheimer Disease.

19. Explain diabetes insipidus.

20. Short note on hypertrophy of heart.

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