AF-1945 **MBC4E2**

M.Sc. DEGREE EXAMINATION, APRIL 2010

Fourth Semester

Biochemistry

Elective-PLANT BIOCHEMISTRY

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Section - A (10 × 2 = 20)

Answer **All** the questions.

1. Write the types of plastids.
2. List out the functions of xylum and phloem.
3. Write note on role of zinc in plants.
4. Define sulfate assimilation.
5. How the plants produce and store the strach ?
6. Write the difference between Light and Dark reactions.
7. Write the functions of abscisic acid.
8. Define phenolic glycosides.
9. What are the enzymes present in cell wall ?
10. Define plant tissue culture.

Section - B (5 × 5 = 25)

Answer **All** the questions.

11 (a) Explain the structure and functions of Nucleus.

Or

(b) Explain the mechanism for movement of solutes.

12. (a) Write the source, physiological role and deficiency symptoms of Iron.

Or

(b) Write note on sulphur cycle.

13. (a) Explain the structure and compositionof photosynthetic apparatus.

Or

(b) Write note on photorespiration.

14. (a) What are plant growth inhibitors ? Explain with examples

Or

(b) Write note on Biosynthesis of Alkaloids.

15. (a) Explain the Biochemistry of Pathogen specificity.

Or

(b) Write note on Biochemistry of senesence

Section - C

(3 × 10 = 30)

Answer any **Three** of the following.

16. Give a detailed account on transport mechanism.

17. Describe in detail about the biological Nitrogen fixation.

18. Explain the CAM pathway. Add note on factors affecting the rate of photosynthesis.

19. Briefly explain about the mechanism of action of Auxins.

20. Give a detailed account on Phytochrome in plant growth and Development.

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AF-1931 MBC1C3

M.Sc. DEGREE EXAMINATION, APRIL 2010

First Semester

Biochemistry

ENZYME TECHNOLOGY

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** questions

1. Define active site.

2. What is enzyme turn over number ?

3. What are Inhibitors ?

4. What is first-order reaction ?

5. How the enzymes are purified with the help of gel filtration chromatography ?

6. What is the need of enzyme purification ?

7. What are Immobilised cells ?

8. What is kinetics of Immobolization ?

9. What is synzyme ?

10. What are Biochips ?

Part - B

(5 × 5 = 25)

Answer **All** questions

11. (a) Write note on specificity of enzymes.

(Or)

(b) Draw L.B plot and write its significance.

12. (a) Describe the mechanism of action of Bisubstrate reaction.

(Or)

(b) Derive M.M Equation.

13. (a) Explain the criteria of purity of Enzymes.

(Or)

(b) Write note on source of extraction of Enzymes.

14. (a) Write note on techniques of Immobilization.

(Or)

(b) Write briefly about Bioreactors.

15. (a) Discuss the criteria for selecting ideal biosensor.

(Or)

(b) Write note on the following

(i) Immuno biosensor.

(ii) Cell based biosensor.

Part - C (3 × 10 = 30)

Answer any **Three** questions

16. Briefly classify the enzymes according nomenclature.

17. Explain the types of enzymes catalysis.

18. Describe the various methods of enzyme purification.

19. Give a detailed account on the use of enzymes in Recombinant DNA technology.

20. Explain the principle, components and operations of Biosensor.

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AF-1932 **MBC1E1**

M.Sc. DEGREE EXAMINATION, APRIL 2010

First Semester

Biochemistry

Elective-FOOD TECHNOLOGY

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** questions.

1. Give the types of food microorganism.
2. What is extrinsic factors ?
3. Explain dying.
4. Define food preservation.
5. Explain fruit products.
6. Give any two ways of fish spoilage
7. What is intoxication ?
8. Aflatoxins
9. What are the raw materials used for beer ?
10. Define fermentation.

Part - B (5 × 5 = 25)

Answer **All** questions

11. (a) Explain the process of estimating the number of microorganisms in food.

(Or)

(b) Discuss the intrinsic and extrinsic factors.

12. (a) Explain the basic ideas of packing.

(Or)

(b) Write short notes on destruction of microorganism by heat and gas treatment.

13. (a) Write short notes on meat spoilage.

(Or)

(b) Give an account on the composition of cereals.

14. (a) Explain the following.

(i) Botulism.

(ii) Salmonellosis.

(Or)

(b) Discuss the food poisioning in detail.

15. (a) Explain the production of wine.

(Or)

(b) Discuss in detail about mushroom farming

Part - C

(3 × 10 = 30)

Answer any **Three** questions

16. Bring out the relations of biotechnology with food industry.

17. Explain the methods of food preservation.

18. Describe the causes and prevention of food spoilage.

19. Discuss the food borne illness in detail.

20. Describe the various products of fermented food.

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AF-1933 **MBC1E2**

M.Sc. DEGREE EXAMINATION, APRIL 2010

First Semester

Biochemistry

Elective-NUTRITIONAL BIOCHEMISTRY

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** the questions.

1. What is meant by SDA ?

2. What are Carbohydrates ?

3. Explain malnutrition.

4. Write a short note on starvation.

5. How can vitamins be classified ?

6. Write about Nutritional requirements during pregnancy.

7. Write the treatment of Dental carries.

8. Describe the diet for Inherited metabolic disorders.

9. Define food allergy.

10. What is hypersensitivities ?

Part - B (5 × 5 = 25)

Answer **All** the questions.

11. (a) Explain the factors affecting BMR.

(*Or*)

(b) Write the requirements and sources of unavailable Carbohydrates.

12. (a) Prepare the list of Protein requirements at different stages.

(*Or*)

(b) Write about the management of Marasmus and Kwashiorkar diseases.

13. (a) Elucidate the sources, functions and deficies of water soluble vitamins.

(*Or*)

(b) Discuss the nutritional requirements of infants and children.

14. (a) Write the role of diet of Atherosclerosis and Rheumatic disorders.

(*Or*)

(b) Explain in detail the role of diet of phenylketonuria and Galactasemia.

15. (a) What do you mean by antigen ? Discuss the role of antigen.

(*Or*)

(b) Explain the symptoms and diagnosis of food allergy.

Part - C

(3 × 10 = 30)

Answer any **Three** questions.

16. Discuss in detail the physico-chemical properties and physiological actions of unavilable carbohydrates.

17. Write about starvation. Write the Techniques for the study of starvation.

18. Discuss in detail the Nutritional significane of diatory calcium, phosphorous and magnesium.

19. Write the role of diet and Nutrition in the prevention and treatment of the following diseases.

    (i) Hyperlipidema and

    (ii) Flauresis.

20. Give a detailed account on the Diagnosis and Management of allergy.

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AF-1934 MBC 2C1

M.Sc. DEGREE EXAMINATION, APRIL 2010

Second Semester

BIOCHEMISTRY

CELL AND MOLECULAR BIOLOGY

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 marks

Part - A (10 x 2 = 20)

Answer ALL Questions

1. Define Phagocytosis and Pinocytosis.
2. Define Endocytosis and Exocytosis.
3. What are the different types of chlorophyll?
4. Write down the components of ETC.
5. What are Nucleosomes?
6. What are polytene chromosomes?
7. Name the hormones involved in Cancer.
8. Define Karyokinesis and Cytokinesis.
9. Define AIDS.
10. What do you mean by cell differentiation?

Part-B (5 x 5 = 25)

Answer ALL Questions

11. a. Write down the differences between Prokaryotes and Eukaryotes.

(OR)

b. Write brief notes on Neuromuscular junction.

12. a. Give the Structure of Mitochondria.

(OR)

b. Explain photorespiration.

13. a. Give a brief note on Specialized chromosomes.

(OR)

b. What are supranucleosomal structures? Explain.

14. a. Give detailed note on Trp Operon.

(OR)

b. Note down the differences between Mitosis and Meiosis.

15. a. Explain the life cycle of Malarial parasites.

(OR)

b. Explain the life cycle of Filarial parasites.

Part-C (3 x 10 = 30)

Answer any THREE Questions

16. Explain the structure and organization of membrane.

17. Explain photosynthesis.

18. Give a detailed note on DNA transcription.

19. Explain the Eukaryotic Gene Regulation.

20. Explain the cell differentiation and development in Drosophila.

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AF-1935 MBC2C2

M.Sc. DEGREE EXAMINATION, APRIL 2010

Second Semester

Biochemistry

MICROBIOLOGY AND IMMUNOLOGY

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** the questions.

1. Write any four differences between Prokaryotes and Eukaryotes.
2. What is pure culture ?
3. What are RNA viruses ?
4. What are the economic importance of Algae ?
5. Define Paratope and Epitope.
6. Define Allotypes and Idiotypes.
7. What are cytokines ? Give examples.
8. Define Immunological memory.
9. Write down the differences between Immediate and Delayed Hypersensitivity reactions.
10. What are tumor Antigens ?

Part - B (5 × 5 = 25)

Answer **All** the questions.

11. (a) Note the characteristic features of cyanobacteria.

Or

(b) Give a brief note on the types and preparation of Media.

12. (a) Explain the structure and replication of Retoviruses.

Or

(b) Explain the structure of HIV.

13. (a) Give a brief note on the cells of Reticula Endothelial system.

Or

(b) MALT—Discuss.

14. (a) Give a detailed note on T and B-cell receptors.

Or

(b) A detailed note on Antigen processing and presentation.

15. (a) HLA—Explain

Or

(b) What are the tumor causing agents and Immunotherapy of tumors.

Part - C

(3 × 10 = 30)

Answer any **Three** questions.

16. Define Microbial growth and explain the biological significance of growth curve.

17. Explain in detail the economic importance of fungi.

18. Give a detailed study on the structure of Immunoglobulin and its types

19. Types of Immunity—Explain.

20. Auto Immune disease—A detailed note.

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AF-1936 **MBC2C3**

M.Sc. DEGREE EXAMINATION, APRIL 2010

Second Semester

Biochemistry

BIOTECHNOLOGY

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** the questions.

1. BAC
2. Write notes on BPR 322.
3. Define gene mapping.
4. What is Tag sequences.
5. PEG
6. What is gene transfer ?
7. RAPD
8. Satellite DNA.
9. List out any two blood products.
10. Write short notes on Transgenic animal.

Part - B (5× 5 = 25)

Answer **All** the questions.

11. (a) Write plasmids in detail.

Or

(b) Describe the Agrobacterium mediated transformation

12. (a) Explain the synthesis of DNA.

Or

(b) Write the principle and applications of RFLP.

13. (a) Discuss about the process of electro poration.

Or

(b) Explain the stategies and procedure of IVF.

14. (a) Explain the estimation of Protein.

Or

(b) Write short note on RAPD.

15. (a) Explain the merits and demerits of GMOS.

Or

(b) Give an account on Blood products

Part - C

(3 × 10 = 30)

Answer any **Three** questions.

16. Explain in detail about various types of vectors.

17. Describe PCR in detail.

18. Explain the transformation process.

    (a) Micro injection.

    (b) Viral transfection.

    (c) Protoplast fusion.

    (d) Using PEG and $CaCl_3$.

19. Explain the principle and applications of electrophoresis

20. Explain the various transgenic Products.

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AF-1937 **MBC2E1**

M.Sc. DEGREE EXAMINATION, APRIL 2010

Second Semester

Biochemistry

Elective-BIOPROCESS TECHNOLOGY

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** the questions.

1. Role of pH in fermentation process.
2. Cell lines.
3. Extra cellular enzymes.
4. Define Agitation.
5. GMO.
6. SCP.
7. Give any five importance of vitamins.
8. Biofuels.
9. Define collaginases.
10. Role of Lipases.

Part - B (5× 5 = 25)

Answer **All** the questions.

11. (a) Briefly explain the types of fermentors.

Or

(b) Give a short notes the cell lines used on commerical scale operation.

12. (a) Explain media formulation and sterilization.

Or

(b) Briefly explain the immobilization of enzymes.

13. (a) Give a short notes on the following.

(i) Antibody Engineering.

(ii) Monoclonal Antibody.

Or

(b) Explain the protoplast fusion.

14. (a) Briefly explain the synthesis of growth Hormones.

Or

(b) Briefly explain the process involved in the synthesis of peptides and Antibiotics.

15. (a) Explain the role of streptokinase and Urokinase in medical industry.

Or

(b) Give the role of Phosphatases and transferases in research industry.

Part - C

(3 × 10 = 30)

Answer any **Three** questions.

16. Explain the Downstream processes.

17. Explain the following :

    (i) Aerobic Fermentation.

    (ii) Anaerobic Fermentation.

    (iii) Aseptic maintenance.

    (iv) Inoculum preparation.

18. Elaborately explain the Gene transfer technology.

19. Give of short note on the following synthesis of :

    (i) Alcohols.

    (ii) Vitamins.

    (iii) Biofuels.

    (iv) MCA.

20. Listout the importance of enzymes in Food and Research industry.

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AF-1938 **MBC2E2**

M.Sc. DEGREE EXAMINATION, APRIL 2010

Second Semester

Biochemistry

Elective-NANOTECHNOLOGY

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** questions.

1. Write short notes on Bionanomaterial.

2. Write any two uses of Starch.

3. Define computer modelling.

4. What are Recombinant DNA.

5. Give an account on Nanomachines.

6. Define Molecular recognition.

7. Define Nano assembly.

8. Write notes on Transformation.

9. What are ethical consideration.

10. Define nanotubule.

Part - B (5 × 5 = 25)

Answer **All** questions.

11. (a) Brief account on relationship between Biotechnology and Bionanotechnology.

Or

(b) Give an account on Protein used for carrying information.

12. (a) Explain the role of X-ray crystallography in nanotechnology.

Or

(b) Describe the computer based molecular designing.

13. (a) Explain the Biomolecular structure.

Or

(b) Explain the Natural bionanotechnology designing.

14. (a) Explain the Machine Phase for bionanotechnology.

Or

(b) Describe Biomolecular sensing.

15. (a) Discuss about Modern trends in Bionanotechnology.

Or

(b) Explain the sticky Finger Problems.

Part - C

(3 × 10 = 30)

Answer any **Three** questions.

16. Explain the modern trends of Bionanomachines.

17. Describe NMR Spectroscopy.

18. Discuss in detail about biomolecular materials.

19. Explain the Nano assembly.

20. Describe the Future For Bionanotechnology.

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AF-1939 **MBC3C1**

M.Sc. DEGREE EXAMINATION, APRIL 2010

Third Semester

Biochemistry

GENE EXPRESSION AND METABOLIC REGULATION

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Section - A (10 × 2 = 20)

Answer **All** questions.

1. Define oncogenes.

2. What do you mean by RNAi ?

3. Define Receptors and its characterestics.

4. What are secondary messengers ?

5. What is NADH/NAD^+ ratio ?

6. Define coupling reaction.

7. Diabetes and its type-A note.

8. Why fatty acid synthase complex is a Multienzyme complex ?

9. Name the ksy enzymes of nucleotide synthesis.

10. Write the structure of pyrimidines.

Section - B (5 × 5 = 25)

Answer **All** questions.

11. (a) Lac operon-Explain.

(Or)

(b) A brief note on Agonists and Antagonists.

12. (a) Role of Hormones in water and electrolyte mechanism - Discuss.

(Or)

(b) How phosphokinases play an important role in signal Transduction.

13. (a) Explain about the feedback regulation in carbohydrate metabolism.

(Or)

(b) $NADH^{\pm}$ /NAD^{+} ratio-Discuss.

14. (a) Ketogenesis-Explain.

(Or)

(b) Give the synthetic process of any 5 aminoacids.

15. (a) Give a brief note on the role of Acetyl COA

(Or)

(b) Write about the key enzymes of Nucleotide synthesis and its importance.

Section - C (3 × 10 = 30)

Answer any **Three** questions.

16. Explain about Oncogenes.

17. Role of CAMP as Secondary messengers with suitable examples.

18. Give a detailed note on the regulation of Fatty acid synthesis.

19. Explain the importance of oxidation-reduction reaction process and coupled reactions.

20. Write in detail the steps involved in pyrimidine synthesis.

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AF-1940 MBC3C2

M.Sc. DEGREE EXAMINATION, APRIL 2010

Third Semester

Biochemistry

MEDICAL BIOCHEMISTRY

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** the Questions.

1. How will you collect and preserve C.S.F ?

2. Write the normal values for serum and plasma.

3. Define Griggrlar Syndrome.

4. What are the symptoms of Thalessemia ?

5. What is Diabetic Coma ?

6. Write note on lipidenia.

7. Define Diabetic Insipidus.

8. What is free water clearance ?

9. Define peptic ulcer.

10. What is parental and neonatal screening ?

Part - B (5 × 5 = 25)

Answer **All** the Questions.

11. (a) Write note on SGO ?

Or

(b) Explain the clinical role of plasma lipase ?

12. (a) Write note on disorder of Cysteine Metabolism.

Or

(b) Explain the following

(i) Multiple Myeloma.

(ii) Haemophilia.

13. (a) Write note on glycosuria.

Or

(b) Explain about the lipoproteinemias.

14. (a) Write note on gall stones.

Or

(b) How will you confirm the following abnormal constituence of urine.

(i) Porpnyrin.

(ii) Ketone bodies.

(iii) Uric acid.

15. (a) Write the immunological test for pregnancy ?

Or

(b) Write note on the following.

(i) Cerebral Haemorrhage.

(ii) Thrombosis.

Part - C (3 × 10 = 30)

Answer any **Three** Questions.

16. Write note on Isozymes and their diagnostic test.

17. Give a detail account on Liver function test.

18. Explain the fatty Liver with its Clinical Symptoms and Management.

19. Explain in detail about Renal function test.

20. Give a detailed account on origin, composition and analysis of amniotic fluid.

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AF-1941 MBC3C3

M.Sc. DEGREE EXAMINATION, APRIL 2010

Third Semester

Biochemistry

BIOSTATISTICS AND BIOCHEMISTRY

(CBCS—2008 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** questions.

1. Calculate the mean, median, mode for the following data.
   3, 4, 5, 10, 10, 7, 2
2. What is skewness ? Give the formula for Coefficient of skewness.
3. What is binomial distribution ?
4. Short note on Poisson distribution.
5. Give two application of Chi-Square test
6. What is randomized design ?
7. Transcription - Write the impact in Bioinformatics.
8. What do you mean by genebank ?
9. What is combinatorial chemistry ?
10. Define docking.

Part-B

(5 × 5 = 25)

Answer **All** questions.

11. (a) Write note on following

(i) Histogram.

(ii) Frequency polygon.

Or

(b) What is Correlation ? Explain its types.

12. (a) Write note on (a) Additional rule.
(b) Multiplicational rule.
(c) Condition rule.

Or

(b) What is random variable ? Add note on Contineous random variable ?

13. (a) Commont on the utility of Standard error.

Or

(b) A sample of 900 numbers is found to have a mean 3.5cm can it be reasonably regarded as a sample from a large population whose mean is 3.38 cm and standard deviation 2.4.

14. (a) Highlight on PAM substitution matrices.

Or

(b) Briefly explain GeneBank format.

15.(a) Describe the multiple sequence alignment.

Or

(b) Explain the bioinformatics applications in Pharmacogenetics.

Part - C

$(3 \times 10 = 30)$

Answer any **Three** questions.

16. Write note on the following.

    (a) Tabulation of data.

    (b) Rank correlation.

    (c) Bar diagrams.

17. Explain in detail the properties and importance of.

    (a) Binomial distribution.

    (b) Poisson distribution.

18. What is ANOVA ? Explain its types and also add note on its significance.

19. Describe the DNA sequencing methods.

20. Elaborate on BLAST.

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AF-1942 MBC3E1

M.Sc. DEGREE EXAMINATION, APRIL2010

Third Semester

Biochemistry

Elective : BIOPHARMACEUTICALS

(CBCS — 2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** the questions

1. What do you mean by disintegration time ?

2. Write about intramuscular injection.

3. Give a short note on soft drugs.

4. Describe glucoronite Conjugation reaction.

5. What type of drugs are Prepared from Animals ?

6. How Computers are used to designing the drugs ?

7. What are Vitamins ?

8. Draw the structure of Penicillin - G.

9. Explain Clotting factors.

10. Write a short note on interferon.

Part - B (5 × 5 = 25)

Answer **All** the questions.

11. (a) What are the Precautions to be taken during IV injection.

Or

(b) Explain in detail the assay systems.

12. (a) Give a detailed account on Prodrugs.

Or

(b) Write about the Enzyme inhibitors.

13. (a) What are the substances derived from Bacteria and Plants?

Or

(b) Discuss the active Principles behind drug action.

14. (a) Write a note on Skimate Pathway.

Or

(b) Explain in detail the flavonoids.

15. (a) Briefly outline about the Aliginate lyase.

Or

(b) Write a detailed note on erythropoietin.

Part -C $(3 \times 10 = 30)$

Answer any **Three** of the following.

16. What is bioavailability ? What are the factors affecting bioavailability ?

17. Give an detailed account on phase I drug metabolism.

18. Write an essay on Docking Studies.

19. Discuss in detail the phenylpronoid pathway and shimmate pathway.

20. Write an essay on the limitations and the applications of monoclonal antibodies.

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AF-1943 MBC3E2

M.Sc. DEGREE EXAMINATION, APRIL 2010

Thrid Semester

Biochemistry

Elective : DRUG MODELLING AND DESIGNING

(CBCS — 2008 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** questions

1. What is the importance of Systemic route of drug design.

2. Define Drug modelling.

3. Short notes on Prodrug.

4. What is the fast tracts ?

5. What are the two types of adverse drug effects ?

6. Give an account on margin of safety.

7. What is meant by drug clearence ?

8. Write a notes on drug absorption.

9. What is the 3-D properties of drug ?

10. Brief notes on mass ligand.

Part - B

(5 × 5 = 25)

Answer **All** questions .

11. (a) Explain the application of Pharamacokenetics.

Or

(b) Describe the current approaches and philosophies in drug designing.

12. (a) Explain the technical development of New drugs.

Or

(b) Discuss in detail the target validation technology.

13. (a) Write a note on drug resistance.

Or

(b) Explain the Kinetics of drug action.

14. (a) What are the ways in which drugs are excreted ?

Or

(b) Write a note on drug allergy.

15. (a) Describe the screening of drug database.

Or

(b) Discuss the computer design of bioactive compounds.

Part - C

(3 × 10 = 30)

Answer any **Three** of following.

16. Explain the history of Drug designing and modelling.

17. What are the different types of systemic routes of drug administration ?

18. Explain the antibody and peptide structure based drug desiging.

19. Give the mode of action of antimalarial drugs.

20. Describe the uses of computer graphics in drug designing.

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AF-1944 **MBC4E1**

M.Sc. DEGREE EXAMINATION, APRIL 2010

Fourth Semester

Biochemistry

Elective-HORMONES AND CELL SIGNALING

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **All** the questions.

1. Define Hormones and its characteristics.

2. What are Autocoids ?

3. Define Cell signaling and Signal transduction.

4. What are G-protein genes ? Name them.

5. What are cytokines ? Give examples.

6. Name the special factors in Tyrosine kinase cascade.

7. Write the importance of HRE.

8. Name the transcription regulating factors.

9. Write short notes on Type II Diabetes.

10. Write down the importance of mutations in receptor genes.

Part - B (5 × 5 = 25)

Answer **All** the questions.

11 (a) Discuss the classification of Hormones.

Or

(b) How calcium acts as a secondary messenger in cell signalling process ?

12. (a) Explain the structure of G-protein.

Or

(b) Explain the mutations in G-protein genes.

13. (a) Discuss the role of phospholipids in the Intracellular signaling pathways.

Or

(b) Discuss JAK-STAT pathway.

14. (a) Write a detailed note on Cytosolic and Nuclear receptors.

Or

(b) Explain the target gene interaction for the regulation of transcription.

15. (a) Write short notes on the clinical importance of Hormone signaling.

Or

(b) Discuss the Receptor gene mutations.

Part - C

(3 × 10 = 30)

Answer any **Three** Questions.

16. Explain in detail the types of receptors and the various Hormones acting through it.

17. Discuss the role in G-protein in Signal Transduction.

18. Give the cascade pathway of receptor serine kinase and explain its importance.

19. Give a detailed note on the Steroid-Tyroid super family of receptors.

20. Discuss the role of Hormone receptors in the promtion of cancers.

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M.Sc. DEGREE EXAMINATION, APRIL 2010

First Semester

Biochemistry

ANALYTICAL BIOCHEMISTRY

(CBCS—2008 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part - A (10 × 2 = 20)

Answer **all** the Questions

1. Define Homogenization.
2. What are Cryopreservative Methods ?
3. How the column is packed in column Chromatography ?
4. Define I.E.F.
5. Define Beer-Lambort's Law.
6. Write the principle and applications of flourescent spectroscopy.
7. What are the safety measures used in handling radio isotopes ?
8. What is autoradiography ?
9. Write note on Redox Potential.
10. What are Gas sensors ?

Part - B

(5 × 5 = 25)

Answer **all** the Questions

11 a. Write note on organ and tissue slice technique.

(Or)

b. Explain the types of Rotors.

12 a. Write note on principle and Applications of TLC.

(Or)

b. Explain about Isotachophoresis.

13 a. Describe the Instrumentation and applications of UV-Visible Spectroscopy.

(Or)

b. Write note on Emission Spectroscopy.

14 a. Explain Gas Ionization technique.

(Or)

b. Explain the Nuclear Emulsion used in Biological studies.

15 a. Explain the principle and applications of ISE.

(Or)

b. Write note on Glass electrode.

Part - C

(3 × 10 = 30)

Answer any **three** Questions

16. Give a detail account on analytical ultra centrifugation.

17. Briefly discuss about HPLC.

18. Explain in detail about the principle and Instrumentation, applications of NMR.

19. What are the Isotopes commonly used in the biological studies.

20. Write the principle and applications of Referrence electrode.

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