

[KD 505]

Sub. Code : 4005

FIRST M.B.B.S. DEGREE EXAMINATION.

(Non-Semester)

(Revised Regulations)

Paper VI — BIOCHEMISTRY — II

Time : Three hours

Maximum : 50 marks

Theory : Two and a half hours

Theory : 35 marks

M.C.Q. : Half an hour

MCQ : 15 marks

MCQ must be answered separately on the answer sheet provided.

Answer ALL questions.

Draw suitable diagrams wherever necessary.

1. Describe the biochemical actions of insulin in carbohydrate, lipid and protein metabolism. Name the disorder associated with insulin deficiency. How do you confirm the diagnosis? (10)

2. Write short notes on : (10 × 2 ½ = 25)

(a) Name the inherited disorders associated with Tyrosin metabolism noting the enzyme deficiency.

(b) Explain the metabolic inter-relationship between sodium concentration and water volume.

(c) Structure of DNA.

(d) Partition chromatography. (Principle and Clinical Application)

(e) Detoxification of Xenobiotics.

(f) Southern blot technique (procedure)

(g) Name the disorders associated with purine nucleotide metabolism.

(h) Electrophoresis (principle)

(i) Normal blood level of calcium and mention the factors regulating it.

(j) Use of plasmids in genetic engineering.

[KD 505 A]

Sub. Code : 4056

FIRST M.B.B.S. DEGREE EXAMINATION.

(Non-Semester)

(Revised Regulations)

Paper VI — BIOCHEMISTRY — II

Time : Three hours

Maximum : 100 marks

Two and a half hours

Theory : 70 marks

for Theory and 30 minutes

MCQ : 30 marks

for MCQ.

MCQ must be answered separately on the answer sheet provided as per the instructions on the first page.

Draw diagrams wherever necessary.

Answer ALL questions.

1. Discuss the metabolism of tyrosine. Name the biologically important compounds derived from tyrosine. What are the inborn errors of metabolism of this amino acid? (15)

2. Write short notes on : (4 × 5 = 20)

- (a) Metabolic role of methionine.
- (b) Polymerase chain reaction.
- (c) Metabolic acidosis.
- (d) Tests for glomerular function.

3. Write an account of DNA replication. (15)

4. Write short notes on : (4 × 5 = 20)

- (a) Detoxication by conjugation.
- (b) Oncogenes.
- (c) Role of kidneys in acid-base balance.
- (d) Gout.

NOVEMBER - 2001

[KE 505 A]

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FIRST M.B.B.S. DEGREE EXAMINATION.

(Non-Semester)

(Revised Regulations)

Paper VI — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

Theory : Two and a half hours Theory : 70 marks

M.C.Q. : Half an hour M.C.Q. : 30 marks

MCQ must be answered separately on the answer sheet provided as per the instructions on the first page.

1. Name Aromatic Amino acids. Write about metabolism of phenylalanine. (15)

2. Short notes : (4 × 5 = 20)

- (a) Chromatography
- (b) Genetic code
- (c) Blood buffers
- (d) Iodine.

3. How urea is synthesised? What are metabolic disorders of urea cycle? Mention normal blood urea concentration and its importance? (15)

4. Short notes on : (4 × 5 = 20)

- (a) T.RNA
- (b) Test for thyroid function
- (c) Oncogenes
- (d) Colorimeter.

MARCH - 2002

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4. Write short notes on : (4 × 5 = 20)

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Theory : Two and a half hours Theory : 70 marks

M.C.Q. : Half an hour M.C.Q. : 30 marks

MCQ must be answered separately on the answer sheet provided as per instructions on the first page.

1. Define the terms "Replication, transcription and translation". Describe the steps involved in protein biosynthesis. (15)

2. Write short notes on : (4 × 5 = 20)

(a) Maple syrup urine disease

(b) PRPP biosynthesis and its importance

(c) Chromatography

(d) Genetic code.

3. Write in detail diagrammatically the reaction mechanisms by which HCO_3^- is reclaimed and regenerated in kidneys. What is meant by metabolic acidosis and how it is compensated? (15)

(a) Wilson's disease

(b) Structure and functions of Insulin

(c) Carcinogen

(d) Describe the "Southern Blot" technique.

Enumerate two applications of the technique.

[KH 505 A]

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FIRST M.B.B.S. DEGREE EXAMINATION.

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(Revised Regulations)

Paper VI — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

Theory : Two and a half hours Theory : 70 marks

M.C.Q. : Half an hour M.C.Q. : 30 marks

M.C.Q. must be answered SEPARATELY on the answer sheet provided as per instructions on the first page.

Draw labelled diagrams wherever necessary.

1. Name aromatic amino acids. Describe the metabolism of tryptophan. Name the important compounds synthesised from it and metabolic disorders. (15)

2. Write short notes on : (4 × 5 = 20)

(a) Structure and functions of t-RNA.

(b) AIDS.

(c) Occupational hazards.

(d) PCR and its applications.

3. Compare the metabolic changes in well fed state and starvation. (15)

4. Write short notes on : (4 × 5 = 20)

(a) Post translational modifications.

(b) Salvage pathway.

(c) Define and explain point mutation with examples.

(d) Structure of proteins.

[KH 505 A]

October-2003

[KJ 505]

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FIRST M.B.B.S. DEGREE EXAMINATION.

(Non-Semester)

(Revised Regulations)

Paper VI — BIOCHEMISTRY — II

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw labelled diagrams wherever necessary.

I. Write Essay :

(2 × 15 = 30)

(1) Write in detail about structural organization of proteins and briefly mention about various methods used in elucidation of primary structure. (15)

(2) Write how Acid–Base balance is maintained in the body. Mention causes and biochemical alterations of metabolic acidosis. (15)

II. Write short notes on : (10 × 5 = 50)

(a) List various DNA repair mechanisms and give their biomedical importance.

(b) Enzyme defects and biochemical consequences of two inborn errors of phenyl alanine metabolism.

(c) Name heavy metal poisons. Write biochemical consequences and diagnosis of any two.

(d) Biochemical roles and nutritional importance of trace elements.

(e) List the different mechanisms involved in Hormone action and write about the mechanism of action of hormones using CAMP as second messenger.

(f) List various thyroid function tests and give the importance of free thyroid hormones in assessing thyroid function.

(g) Alterations in biochemical investigations in cirrhosis of liver.

(h) Metabolically important products formed from methionine.

(i) Clinical applications of recombinant DNA Technology.

(j) Biochemical applications of tumormarkers.

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(Non-Semester)

(Revised Regulations)

Paper VI — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

Theory : Two hours and Theory : 80 marks
forty minutes

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

Draw labelled diagrams wherever necessary.

I. Write Essay : (2 × 15 = 30)

(1) Discuss the metabolism of GLYCINE. Add a note on Metabolic disorders associated with glycine metabolism. (15)

(2) Discuss the distribution of calcium in the body. Describe the sources, daily requirement, absorption, and excretion of calcium. How is the blood calcium level regulated? (15)

II. Write short notes on : (10 × 5 = 50)

1. Alkaptonuria.
2. Transfer RNA.
3. Metabolism of zinc.
4. Detoxication by conjugation.
5. Salvage pathway of purine synthesis.
6. Metabolic Acidosis.
7. Tumor markers.
8. Clearance tests.
9. Lac operon.
10. Cyto chrome P 450.

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(Non-Semester)

(Revised Regulations)

Paper VI — BIOCHEMISTRY — II

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw labelled diagrams wherever necessary.

I. Essay : (2 × 15 = 30)

(1) Describe the metabolism of phenyl alanine in the body and discuss the inborn errors associated with the metabolism.

(2) What is the normal pH of the blood? Explain the various mechanisms by which the normal pH of the blood is maintained.

II. Short notes on : (10 × 5 = 50)

- (a) Role of vitamin D in calcium metabolism
- (b) Iron
- (c) Prostaglandins
- (d) Ketone bodies
- (e) Degeneracy code
- (f) Detoxification
- (g) Gout
- (h) Anti oxidants
- (i) Genetic code
- (j) Protooncogenes and Oncogenes.

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II. Short notes on : (10 × 5 = 50)

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Paper VI — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

Theory : Two hours and Theory : 80 marks
forty minutes

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

Draw labelled diagrams wherever necessary.

I. Essay : (2 × 15 = 30)

(1) Why Ammonia is toxic to the body? What are the ways by which Ammonia is disposed in the body. Add a note on Hyperammonemia conditions.

(2) What is the normal serum calcium level? Explain how serum calcium level is maintained. Name the hypocalcemia conditions.

- (a) Synthetic nucleotides and their importance.
- (b) Liver function tests.
- (c) Anion gap and its diagnostic importance.
- (d) Tumour Markers.
- (e) Salvage Pathways
- (f) Mechanism of action of Thyroid hormones.
- (g) Detoxification by Hydroxylation.
- (h) Blotting techniques.
- (i) Glutathione role in Amino acid transport
- (j) Essential Amino acids.

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FIRST M.B.B.S. DEGREE EXAMINATION.

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Paper VI — BIOCHEMISTRY — II

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Draw labelled diagrams wherever necessary.

Answer ALL questions.

I. Essay : (2 × 15 = 30)

1. Describe the metabolism of Tryptophan and add a note on inborn errors associated with it.

2. Describe the Denovo synthesis of purine nucleotides.

II. Short notes on : (10 × 5 = 50)

(a) Isoelectric PH.

(b) Thin layer chromatography.

(c) Functions of plasma proteins.

(d) Zinc.

(e) Metabolic acidosis

(f) Gamma amino butyric acid

(g) Methyl melonic aciduria

(h) Structure of t RNA

(i) LAC operon

(j) Insulin.

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FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non-Semester) Regulations

Paper VI — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

Theory : Two hours and Theory : 80 marks
forty minutes

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Draw labelled diagrams wherever necessary.

Answer ALL questions.

I. Essay :

(1) Describe the sources, requirement, absorption, transport, storage forms, functions, deficiency and toxic manifestations of iron.

(1 + 1 + 3 + 2 + 2 + 4 + 5 + 2 = 20)

(2) Discuss urea cycle under the following headings :

- (a) Site
- (b) Sources of amino group
- (c) Steps and
- (d) Regulation. (1 + 1 + 10 + 3 = 15)

(3) Discuss about nucleic acids under following headings :

- (a) Types
 - (b) Functions
 - (c) Components
 - (d) Char gaff's rule of DNA composition
 - (e) Different forms of DNA double helix
- and
- (f) Differences between DNA and RNA.
(1 + 3 + 2 + 2 + 3 + 4 = 15)

II. Write short notes on : (6 × 5 = 30)

- (a) Post translational modifications with two examples.
- (b) Alpha helical structure of a peptide.
- (c) Buffer system in the body.
- (d) Principles of electrophoresis and its clinical applications.
- (e) Applications of genetic engineering.
- (f) G-proteins.

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FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non – Semester) Regulations

Paper VI — BIOCHEMISTRY- II

Time : Three hours Maximum : 100 marks

Theory : Two hours and Theory : 80 marks
forty minutes

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

Draw labelled diagrams wherever necessary

I. Essay :

1. What is the active form of methionine how it is formed? What are its functions? Enumerate the steps of methionine metabolism and write the disorders associated with its metabolism. (20)

2. What is the normal pH of blood Discuss the mechanism involved in its regulation. (15)

3. Mention the sources, daily requirement, functions and deficiency symptoms of calcium. Explain how serum level of calcium is regulated. (15)

II. Short notes on :

(6 × 5 = 30)

- (a) Oncogens
 - (b) Electrophoresis
 - (c) Genetic code
 - (d) Insulin
 - (e) Gout
 - (f) Detoxification.
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FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non-Semester) Regulations

Paper VI — BIOCHEMISTRY — II

Time : Three hours

Maximum : 100 marks

Theory: Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Essay questions.

1. Describe the mechanism of DNA Replication. Add a note on DNA Repair mechanism. (10 + 5 = 15)

2. Name the branched chain Aminoacids. Describe the pathway for the metabolism of branched chain aminoacids. Add a note on maple syrup urine disease. (2 + 8 + 5 = 15)

3. Short answers : (10 × 5 = 50)

- (a) Recombinant DNA Technology
- (b) Wilson's Disease.

- (c) Secondary Structure of proteins.
- (d) Polyamines.
- (e) Metabolic Acidosis.
- (f) Restriction Endonucleases.
- (g) Functions of Phosphorus.
- (h) Purine salvage pathway.
- (i) Post - Translational modification.
- (j) Role of lungs in Acid-Base balance

FEBRUARY 2008

[KS 505]

Sub. Code : 4056

FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non-Semester) Regulations

Paper VI — BIOCHEMISTRY – II

Q.P. Code : 524056

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw diagrams wherever necessary.

I. Essay questions :

1. What is Normal Blood Glucose Level? Describe the regulation of Blood Glucose. (15)

2. Write in detail about how ammonia is formed from amino acids, transported and connected to urea. (15)

II. Write short notes on : (10 × 5 = 50)

(a) Give the structure of Immunoglobulin and their functions.

(b) Functions of Zinc and Selenium.

- (c) Storage and Transport of Iron in the body.
- (d) Transamination reactions.
- (e) Renal Regulation of pH of Blood.
- (f) Vandenberg's reaction.
- (g) Fluorometry.
- (h) Hyperurecemia.
- (i) Secondary structure of protein.
- (j) Transmethylation