

APRIL 2001

[KD 229]

M.Sc. (Non-Clinical) DEGREE EXAMINATION.

Final

Branch III — Biochemistry

Paper II — ENZYMES, INTERMEDIARY
METABOLISM AND NUTRITION

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Describe the final common pathway of catabolism of carbohydrates, fats and proteins and its biomedical importance. Add a note on the bioenergetics. (25)
 2. Discuss the mechanism of action, specificity and properties of Enzymes. What are the factors affecting Enzyme action. (25)
 3. Write briefly on : (5 × 10 = 50)
 - (a) Digestion and absorption of proteins.
 - (b) Specific Dynamic Action.
 - (c) Importance of Trace Elements.
 - (d) Mitochondria.
 - (e) PUFA.
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APRIL 2003

[KI 229]

Sub. Code : 2967

M.Sc. (Non-clinical) DEGREE EXAMINATION.

Final

Branch III — Biochemistry

Paper II — ENZYMES, INTERMEDIARY
METABOLISM AND NUTRITION

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Discuss the changes in the metabolism of carbohydrates, lipids and proteins during starvation.(25)
 2. Describe in detail about the hormones involved in the metabolism of Calcium. How will you estimate the calcium in blood? Also write a note on the significance of ionised calcium. (25)
 3. Write briefly on : (5 × 10 = 50)
 - (a) Dietary fibers.
 - (b) Isoenzymes and Isoforms of creatine phosphokinase.
 - (c) Role of vitamin K in coagulation.
 - (d) Absorption and utilisation of lipids.
 - (e) Role of kidneys in acid base balance.
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APRIL 2004

[KK 229]

Sub. Code : 2967

M.Sc. (Non-Clinical) DEGREE EXAMINATION.

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Branch III — Biochemistry

Paper II — ENZYMES, INTERMEDIARY
METABOLISM AND NUTRITION

Time : Three hours

Maximum : 100 marks

Sec. A & B : Two hours and
forty minutes

Sec. A & B : 80 marks

Section C : Twenty minutes

Section C : 20 marks

Answer Sections A and B in the SAME Answer Book.

Answer Section C in the answer sheet provided.

SECTION A

1. Discuss the structure, functions, occurrence, sources, daily requirements and deficiency manifestations of Vitamin B₆. (15)
2. Discuss in detail protein biosynthesis and post translational modifications of protein. (15)

SECTION B

3. Write short notes on the following : (10 × 5 = 50)
 - (a) Michaelis constant
 - (b) Digestion and absorption of fats

- (c) Rapaport-Leubering cycle
- (d) Lipotropic factors and fatty liver
- (e) Biogenic amines
- (f) PKU
- (g) Coagulation of blood
- (h) Occupational hazards
- (i) Metabolic adaptation during starvation
- (j) Dietary requirements for a diabetes mellitus patient.

AUGUST 2004

[KL 229]

Sub. Code : 2967

M.Sc. (Non-Clinical) DEGREE EXAMINATION.

Final

Branch III — Biochemistry

**Paper II — ENZYMES, INTERMEDIARY
METABOLISM AND NUTRITION**

Time : Three hours Maximum : 100 marks

**Sec. A & B : Two hours and Sec. A & B : 80 marks
forty minutes**

Section C : Twenty minutes Section C : 20 marks

Answer Sections A and B in the SAME Answer Book.

Answer Section C in the answer sheet provided.

SECTION A

1. Discuss in detail the isolation and purification of an enzyme. How can the purity of an enzyme be assessed? (10 + 5 = 15)
2. How is the blood glucose level regulated by different mechanism? (15)

SECTION B

3. Write short notes : (10 × 5 = 50)
 - (a) Gluconeogenesis
 - (b) Role of carnitine in fatty acid oxidation
 - (c) Neurotransmitters
 - (d) Point mutation
 - (e) PCR
 - (f) SDA of food stuff and its significance
 - (g) Balanced diet for a student
 - (h) Biochemical basis of cancer
 - (i) Detoxication
 - (j) Purine salvage pathway.

MARCH 2005

[KM 229]

Sub. Code : 2967

M.Sc. (Non-clinical) DEGREE EXAMINATION.

Final

Branch III — Biochemistry

**Paper II — ENZYMES, INTERMEDIARY
METABOLISM AND NUTRITION.**

Time : Three hours Maximum : 100 marks

**Sec. A & B : Two hours and Sec. A & B : 80 marks
forty minutes**

Section C : Twenty minutes Section C : 20 marks

Answer Sections A and B in the SAME Answer Book.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

- 1. Discuss the metabolism of Tyrosine. (15)**
- 2. Write about the inhibitors of Electron transport
chain and Oxidative phosphorylation. (15)**

SECTION B — (10 × 5 = 50 marks)

- 3. Write briefly on :**
 - (a) Calmodulin**
 - (b) Limiting aminoacids**
 - (c) Tumour necrosis factor**
 - (d) Salvage pathway of purines**
 - (e) Superoxide metabolism**
 - (f) Role of zinc in human metabolism**
 - (g) Folate trap**
 - (h) Apolipoproteins**
 - (i) Transaminases**
 - (j) Renal glycosuria**

MARCH 2006

[KO 229]

Sub. Code : 2967

M.Sc. (Non-clinical) DEGREE EXAMINATION.

Final

Branch III — Biochemistry

Paper II — ENZYMES, INTERMEDIARY
METABOLISM AND NUTRITION

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and Sec. A & B : 80 marks
forty minutes

Section C : Twenty minutes Section C : 20 marks

Answer Sections A and B in the **SAME** Answer Book.

Answer Section C in the answer sheet provided.

Answer **ALL** questions.

SECTION A — (2 × 15 = 30 marks)

1. Write in detail about the source, requirement, Biochemical functions and deficiency manifestations of vitamin A.
2. Write in detail about the catabolism of Purine nucleotides. Add a note on salvage pathway of Purine.

SECTION B — (10 × 5 = 50 marks)

3. Write short notes on :
 - (a) Tumour marker
 - (b) Cytochrome P₄₅₀

- (c) Post translational modification of Protein
- (d) Viral oncogenes
- (e) Carnitine
- (f) Enzymes used as drugs
- (g) Biological antioxidants
- (h) Dietary fibers.
- (i) Okazaki fragments.
- (j) Antivitamins.

[KR 229]

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M.Sc. (Non-Clinical) DEGREE EXAMINATION.

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Branch III — Biochemistry

Paper II — ENZYMES, INTERMEDIARY
METABOLISM AND NUTRITION

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.

I. Essay questions :

(1) What is meant by gluconeogenesis? How does it differ from glycolysis? (20)

(2) Write an essay on the nomenclature and classification of enzyme. (15)

(3) Outline the biosynthesis of palmitic acid in cytosol? How is acetyl CoA carboxylase regulated? (15)

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

(a) Explain the allosteric regulation of enzyme with example.

(b) Describe the digestion and absorption of carbohydrate.

(c) What are the factors influencing enzyme activity?

(d) Write a note on lipoproteins.

(e) Write the source, requirement and deficiency of Vit. B₁₂.

(f) What is electron transport chain?

April 2012

[LA 0412]

Sub. Code: 1202

M.Sc BIOCHEMISTRY DEGREE EXAMINATION

Candidates admitted from 2008-2009 batch

**PAPER II - ENZYMES, INTERMEDIATE METABOLISM AND
NUTRITION INCLUDING MINERALS AND VITAMINS HOMEOSTASIS**

Q.P. Code : 281202

Time : Three hours

Maximum :100marks

Answer All questions.

I. Elaborate on :

**Pages Time Marks
(Max.) (Max.) (Max.)**

- | | | | |
|--|----|----|----|
| 1. Write the sources of calcium in diet, the normal serum level, the daily requirement? How is the level of calcium maintained in our body? Add a note on hypo and hypercalcemia? | 17 | 40 | 20 |
| 2. What is the normal serum cholesterol level? Write down the steps of cholesterol synthesis. Add a note on regulation of the synthesis. List the name and role of cholesterol lowering drugs. | 17 | 40 | 20 |

II. Write notes on :

- | | | | |
|---|---|----|---|
| 1. Different types of Phase II reactions in metabolism of xenobiotics with suitable examples. | 4 | 10 | 6 |
| 2. What are the factors that affect enzyme activity? Explain how they affect enzyme activity. | 4 | 10 | 6 |
| 3. Write short notes on Glycolysis in R.B.Cs (Erythrocytes). | 4 | 10 | 6 |
| 4. Neurotransmitters form tyrosine. | 4 | 10 | 6 |
| 5. What is the active form of Thiamine? Mention its role in carbohydrate metabolism. | 4 | 10 | 6 |
| 6. How is bilirubin formed? What are the biochemical features of Hemolytic Jaundice? | 4 | 10 | 6 |
| 7. Write short notes on mucopoly saccharidoses and the test for mucopolysaccharides. | 4 | 10 | 6 |
| 8. Primary structure of protein and methods for determination of primary structure. | 4 | 10 | 6 |
| 9. Write short note on fatty liver and lipotropic factors. | 4 | 10 | 6 |
| 10. Alpha and omega oxidation of fatty acids. | 4 | 10 | 6 |
