M.D. DEGREE EXAMINATION, MARCH 1990.

Branch XIII — Biochemistry.

ENZYMES, INTERMEDIATE METABOLISM

Time : Three hours.

Answer ALL the questions.

1. Describe the role and metabolism of glycogen in the body. Give an account of glycogen storage diseases and a method to investigate and diagnose them.

2. (*a*) Describe any method employed for identifying the active site of an enzyme.

(*b*) Give an account of use of enzymes in clinical practice.

3. Write notes on :

(*a*) Choice of an edible fat.

(*b*) Errors of purine metabolism.

(*c*) Nicotinamide coenzymes.

(*d*) Sickle cell anemia.

(*e*) Restriction enzymes.

M.D. DEGREE EXAMINATION, SEPTEMBER 1991.

Branch XIII — Biochemistry

Paper II — ENZYMES, INTERMEDIATE METABOLISM

Time : Three hours. Maximum : 100 marks.

Answer ALL the questions.

1. List the different ways in which the catalytic activity of enzymes may be regulated.

What are the clinical applications of isozymes ? (25 marks)

2. Discuss the pathway of gluconeogenesis and how gluconeogenesis and glycolysis are reciprocally regulated.

Describe the biochemical defect in galactosemia. (25 marks)

3. Write notes on :

(a) Gout.

(b) Biosynthesis of physiologically active amines.

(c) Mechanism of ATP synthesis.

(d) Transport of mitochondrial acetyl CoA into the cytosol.

(e) Transamination reactions. (5×10=50 marks)

March-1992

[252]

M.D. DEGREE EXAMINATION, MARCH 1992.

Branch XIII — Biochemistry

Paper II — ENZYMES. INTERMEDIATE METABOLISM

Time : Three hours

Answer ALL the questions.

1. List the four different classes of proteolytic enzymes and summarize their properties.

2. Explain why triacylglycerols are highly concentrated forms of stored metabolic energy.

3. Write notes on :

(a) Phenyl ketonuria.

(b) Significance of pentose phosphate pathway.

(c) Ketone bodies.

(d) Antifolates and their mechanism of action.

(e) Significance glycogenolysis and glycogenesis.

M.D. DEGREE EXAMINATION, SEPTEMBER 1992

Branch XIII - Biochemistry

Paper II - ENZYMES, INTERMEDIATE METABOLISM

Time: Three hours Maximum:100 marks

Answer ALL questions

1. Discuss the removal of Nitrogen from the body. (25 marks)

2. Describe the metabolism of cholesterol. How is the blood cholesterol level influenzed. (25 marks)

3. Write short notes on:

   (a) Adenosine Deaminase

   (b) Protein kinases

   (c) Iron Homeostasis

   (d) Synthesis of lactose

   (e) BIOTIN

(5x10=50 marks)

[PR 393] November-1993

M.D. DEGREE EXAMINATION.

Branch XIII — Biochemistry

(Old/New Regulations)

ENZYMES, INTERMEDIATE METABOLISM

Time : Three hours. Maximum : 100 marks.

Answer ALL questions.

1. Describe glycogenesis, glycogenolysis and the regulation of these pathways in liver and muscle. Add a note on glycogen storage diseases. (25)

2. (*a*) Define KM value of an enzyme. How is it estimated ? What is the importance of determining it ?

(*b*) How do allosteric enzymes regulate the rate of metabolic pathways ? Explain with examples. (25)

3. Write short notes on :

(*a*) LDL and HDL cholesterol.

(*b*) Errors of urea synthesis.

(*c*) Nicotinamide coenzymes.

(*d*) Restriction enzymes.

(*e*) Protein components of muscle. ($5 \times 10 = 50$)

April-1994

[VM 1096]

M.D. DEGREE EXAMINATION.

Branch XIII — Biochemistry

(Old / New Regulations)

ENZYMES, INTERMEDIATE METABOLISM

Time : Three hours. Maximum : 100 marks.

Answer ALL questions.

1. Describe the formation of various products from phenyl alanine in the body. What are the inborn errors seen in each of these pathways. (25)

2. (a) Give a brief account of the various types of enzyme inhibition.

(b) Briefly outline the general mechanisms which regulate enzyme activity. (25)

3. Write short notes on :

(a) Inborn errors of glycogen metabolism.

(b) Sickle cell anemia.

(c) Gluconeogenesis.

(d) Sphingolipidoses.

(e) Regulation of gene expression. ($5 \times 10 = 50$)

November-1994

[ND 198]

M.D. DEGREE EXAMINATION.

Branch XIII — Biochemistry

(Old/New Regulations)

ENZYMES, INTERMEDIATE METABOLISM

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Describe the different types of fatty acid oxidation. How are the unsaturated, odd chain and branched chain fatty acids oxidised? (25)

2. What are the different biologically important substances formed from Tryptophan? How is tryptophan catabolised? What are the diseases associated with tryptophan metabolism? (25)

3. Write short notes on :

(a) Pyruvate dehydrogenase complex.

(b) Galactose.

(c) Prostaglandins.

(d) Catecholamines

(e) Active acetate. (5 x 10 = 50)

April-1995

[SB 198]

M.D. DEGREE EXAMINATION.

Branch XIII — Biochemistry

(Old/New Regulations)

ENZYMES, INTERMEDIATE METABOLISM

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Describe Heme synthesis. How is it regulated? Enumerate porphyrinopathies and briefly discuss the possible enzymatic defects in each and their relationships to the laboratory findings. (25)

2. Describe the synthesis of fatty acid and triglycerides. Indicate the factors involved in regulation of the processes. (25)

3. Write short notes on :

(a) Glucose alanine cycle.

(b) Gangliocides.

(c) Cyclic AMP.

(d) Primaquine sensitivity and favism.

(e) Substrate cycles. (5 × 10 = 50)

April-1997

MP 164

M.D. DEGREE EXAMINATION

Branch XIII - Biochemistry

(Revised Regulations)

Paper II - ENZYMES, INTERMEDIARY METABOLISM AND NUTRITION

Time: Three hours Max.marks:100

Answer All Questions

1. Describe steroidogenesis and the regulatory mechanisms involved. (25)

2. What are bioamines? Describe their synthesis, breakdown and biochemical role. (25)

3. Write briefly on:

   (a) Load tests

   (b) MUFA and PUFA

   (c) Cyclic nucleotides

   (d) Antimetabolites

   (e) Nitric oxide.

(5x10=50)

October-1997

MS 162

M.D. DEGREE EXAMINATION

Branch XIII - Biochemistry

(Revised Regulations)

Paper II - ENZYMES, INTERMEDIATRY METABOLISM AND NUTRITION

Time: Three hours Max.marks:100

Answer All Questions

1. Describe the metabolism of glucose in RBC and its importance in the maintenance of the structure and function of erythrocytes. (25)

2. Describe the synthesis of Prostaglandins Thromboxanes and Leukotrienes. Elucidate their role in the body. (25)

3. Write briefly on:

(a) Enzyme inhibition

(b) Salvage pathways of nucleotides

(c) Polyamines

(d) Antioxidants

(e) Xenobiotics.

(5x10=50)

April-1998

SV 173

M.D.DEGREE EXAMINATION

Branch XII - Biochemistry

(Revised Regulations)

Paper II - ENZYMES, INTERMEDIARY METABOLISM AND NUTRITION

Time: Three hours Max.marks:100

Answer All Questions

1. What is normal blood sugar level? How is it maintained at a constant level? (25)

2. Describe how ammonia is formed and detoxified in the body. (25)

3. Write briefly on:

   (a) Vitamin E as antioxidant

   (b) Peroxidase

   (c) Haem catabolism

   (d) One carbon metabolism

   (e) Allosteric enzymes.

(5x10=50)

[SG 173] **Sub. Code : 2050**

M.D. DEGREE EXAMINATION.

Branch XIII — Biochemistry

(Revised Regulations)

Paper II — ENZYMES, INTERMEDIARY METABOLISM AND NUTRITION

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Describe the synthesis, transport and metabolism of bilirubin. Add a note on hyperbilirubinemias. (25)

2. Discuss the changes in the metabolism of Carbohydrates, lipids and proteins during a period of starvation induced ketoacidosis. (25)

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

(a) Chemiosmotic hypothesis

(b) Synthesis and degradation of any five neurotransmitters

(c) Absorption of digested lipids

(d) Antioxidant vitamins

(e) Iron metabolism.

October-1999

[KA 173] **Sub. Code : 2050**

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch XIII — Biochemistry

Paper II — ENZYMES, INTERMEDIARY METABOLISM AND NUTRITION

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Describe briefly the chemical nature, mode of action, dietary sources and nutritional importance of thiamine. Describe the mechanism of its action. (25)

2. Describe ketogenesis. Explain conditions where does it occur. Add a note on its complication. (25)

3. Write briefly on : (5 × 10 = 50)

   (a) Isoenzymes

   (b) Lipoproteins

   (c) Catecholamines

   (d) Ca^{+2} – ion as a second messenger

   (e) Chemiosmotic hypothesis.

April-2000

[KB 173] **Sub. Code : 2072**

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch XIII — Biochemistry

Paper II — ENZYMES, INTERMEDIARY METABOLISM AND NUTRITION

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Give a brief account of the chemistry, sources and daily requirements of folic acid. Enumerate its biochemical functions, deficiency manifestations and antagonists. (25)

2. Classify amino acids based on their metabolic fate. Give examples for each class. Discuss the metabolism of tyrosine. What are the biologically important compounds derived from tyrosine? What are the inborn errors of metabolism associated with this amino acid? (25)

3. Write short notes on : $(5 \times 10 = 50)$

(a) Different types of protein–calorie malnutrition and their salient features

(b) Characteristics of facilitated diffusion with two examples

(c) Isoenzymes and their clinical applications

(d) Fluid–mosaic model

(e) Free radical scavanger mechanisms.

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