

MD[BIOCHEMISTRY]

BF/2009/05

Introductory Biochemistry & molecular Biochemistry

[Paper-I]

Time : 3 Hours

M.M.: 100

Note: Attempt all questions.

1. a. Discuss in detail various biochemical principles used for treatment of cancer giving examples also. [10]
b. Discuss the molecular mechanism for resistance to chemotherapy. [10]
 2. Discuss the disposal of biomedical waste in detail. [20]
 3. **Write short notes on:** [4x5=20]
 - a. Toxic fold.
 - b. Synthetic HDL.
 - c. Heat shock protein.
 - d. APO-E
 4. **Write briefly about:**
 - a. Liposomes [7]
 - b. Caspases in apoptosis. [7]
 - c. Point of care testing. [6]
 5. **Write short notes on:** [4x5=20]
 - a. Selenoproteins.
 - b. Retrolysosomal protein degradation.
 - c. Biochemistry of Osteoporosis.
 - d. Glycomics.
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Biochemistry of body Metabolism

[Paper-II]

Time : 3 Hours

M.M.: 100

Note: Attempt all questions.

1. a. Describe the transketolation reaction and its clinical significance. [10]
b. Describe the mechanism of transport of Cytoplasmic NADH to Mitochondria. [10]
 2. a. Describe the Fatty acid synthase complex and the biochemical reaction catalysed by it. [10]
b. Write a short notes on Hypertriglyceridemias. [10]
 3. **Write short notes on:**
a. Lactose intolerance. [5]
b. Inhibitors of Nucleotide metabolism. [5]
c. Anaerobic Glycolysis in various cells and tissues. [10]
 4. **Write short notes on:**
a. Significance of Glucose-6-phosphate dehydrogenase in RBCs. [5]
b. Structure and function of Collagen. [5]
c. Role of enzymes in diagnosis of Hepatic disorders. [10]
 5. **Write short notes on:**
a. Prostaglandins. [5]
b. Mitochondrial genes. [5]
c. Metabolic disorders due to deficiency of enzymes of the Urea cycle. [10]
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Biochemistry of Hormones, Vitamins, Minerals, Enzymes & Clinical Biochemistry

[Paper-III]

Time : 3 Hours

M.M.: 100

Note: Attempt all questions.

1. **Write briefly about:** [3x5=15]
 - a. Competitive inhibitors as drugs.
 - b. Liposomes and their significance.
 - c. Role of fiber in diet.

2. **Compare and contrast:** [3x5=15]
 - a. Marasmus and Kwashiorkor.
 - b. Positive and Negative Nitrogen balance.
 - c. Direct and Indirect Calorimetry.

3. **Explain why:** [5x5=25]
 - a. Folate antagonists are used in Cancer chemotherapy.
 - b. Obesity is considered a malnutrition state.
 - c. Blood vessels become fragile in deficiency of Vitamin C.
 - d. Iron deficiency anaemia is seen in Copper deficiency.
 - e. Persistent activation of Adenylate cyclase occurs in pertussis.

4.
 - a. Discuss role of various hormones in regulating serum Calcium level. State causes and clinical manifestations of Hypocalcaemia. [15]
 - b. Discuss role of Sex hormones in contraception. [10]

5.
 - a. What are Isoenzymes? Explain with suitable examples how can they be used as diagnostic tool in medicine. [10]
 - b. Discuss mechanism of iron absorption in intestine. Add a note on haemachromatosis. [10]

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Recent advances in clinical Biochemistry and Biochemical methodologies

[Paper-IV]

Time : 3 Hours

M.M.: 100

Note: Attempt all questions.

1. What is Recombinant DNA technology? Describe its usefulness in medicine. [25]
2. Describe the role of Genetic mutation in Carcinogenesis. [25]
3. **Answer in brief:**
 - a. Stem cell research. [9]
 - b. Genomic revolution. [8]
 - c. Clinical significance of Isozymes. [8]
4. **Describe in short:**
 - a. Dry chemistry. [6]
 - b. TLC [6]
 - c. RIA [6]
 - d. Importins and Exportins. [7]
