

## M.D. Examination

## Biochemistry : Branch XVII

## Paper-I

## (General Biochemistry)

[Max. Marks : 100

Date : 02-04-2019, Tuesday]

Time : 3 Hours]

- Instructions :** (1) Figure to the right indicates marks.  
(2) Write legibly and to the point.  
(3) Draw diagrams wherever necessary.

Q1. What is the active form of Vitamin D and how is it formed. Explain the biochemical basis of clinical manifestation in vitamin D deficiency. (20)

Q2. Describe heme synthesis and its regulation. Explain Lead poisoning as a cause of porphyria. (20)

Q3. Explain in brief: (20)

- (a) Significance of glycogen
- (b) Mention the principle and uses of Electrophoresis
- (c) Biochemical basis of uncouplers
- (d) Radioisotopes in Medical Diagnosis and Treatment

Q4. Describe the structure and functions of phospholipids. (20)

Q5. Write briefly on: (20)

- (a) Write the Difference between Competitive inhibition and Non- Competitive inhibition.
  - (b) Difference between hemoglobin and myoglobin
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## M.D. Examination

## Biochemistry : Branch XVII

## Paper II

## (Metabolism &amp; Immunochemistry)

[Max. Marks : 100]

Date : 04-04-2019, Thursday]

Time : 3 Hours]

- Instructions :
- (1) Figure to the right indicates marks.
  - (2) Write legibly and to the point.
  - (3) Draw diagrams wherever necessary.

Q1. Describe beta-oxidation of a 16 carbon saturated fatty acid and its energetics. Explain the role of the carnitine in the transport of fatty acid into mitochondria. (20)

Q2. Mention the reaction of glycogenesis and glycogenolysis in flow diagram describing how these pathways are regulated. Describe the distinctive feature of glycogen synthesis and degradation in the liver and skeletal muscle. (20)

Q3. Explain in brief:

- (a) The significance of Lipoprotein lipase
- (b) The biochemical changes in starvation
- (c) Biochemical basis of uncouplers
- (d) Phenylketonuria

Q4. Describe the transport of ammonia and highlight how Ammonia detoxification in the brain differs from that in liver explain biochemical basis of ammonia toxicity. (20)

Q5. Write briefly on:

- (a) The biochemical defect in gout and Lesch Nyhan syndrome.
- (b) The disorder related to immunoglobulins.

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## M.D. Examination

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## Paper III

## (Clinical Biochemistry &amp; Endocrinology)

[Max. Marks : 100]

Date : 08-04-2019, Monday]

Time : 3 Hours]

- Instructions : (1) Figure to the right indicates marks.  
(2) Write legibly and to the point.  
(3) Draw diagrams wherever necessary.

Q1. Indicate the importance of enzyme studies in Myocardial Infarction, Liver diseases, Bone Diseases, Pancreatic Diseases, and Malignant Diseases. (20)

Q2. Describe the role of the kidney in the maintenance of acid-base balance in the body. Explain the reason for the acid-base disorders likely to be found in salicylate poisoning stating the alteration in parameters. Add a note on paradoxical aciduria. (20)

Q3. Explain in brief: (20)

- (a) The chemical composition of the cerebrospinal fluid in various diseases
- (b) Biochemistry of Alzheimer's disease.
- (c) Use of Recombinant DNA technology in Molecular analysis of disease
- (d) Chronic complication of diabetes mellitus

Q4. Enumerate and describe the thyroid function tests. (20)

Q5. Write briefly on: (20)

- (a) Quality Assurance program in the clinical laboratory.
  - (b) What is ISE? Differentiate between direct and indirect ISE.
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## M.D. Examination

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## Paper IV

## (Modern Trends &amp; Recent Advances)

[Max. Marks : 100]

Date : 10-04-2019, Wednesday]

Time : 3 Hours]

- Instructions :** (1) Figure to the right indicates marks.  
(2) Write legibly and to the point.  
(3) Draw diagrams wherever necessary.

Q1. What is the Laboratory Information System (LIS)? Discuss the advantages of LIS in a tertiary care hospital. (20)

Q2. Describe the types and classification of Tumour markers. Give the methods of detection and their clinical uses. (20)

Q3. Explain in brief: (20)

- (a) Cystatin C.
- (b) Application of bioinformatics in medicine
- (c) Brain natriuretic peptide.
- (d) Markers of bone turnover.

Q4. What is the Point of care testing? What are its advantages and disadvantages? (20)

Q5. Write briefly on: (20)

- (a) Nanotechnology in research
  - (b) The significance of NABL accreditation in the clinical chemistry laboratory.
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