

March 2009

[KU 148]

Sub. Code: 2043

**M.D. DEGREE EXAMINATION**

**Branch XIII – BIOCHEMISTRY**  
(Common to all Candidates)

**Paper I – PHYSICAL AND ORGANIC ASPECTS OF  
BIOCHEMISTRY, INSTRUMENTATION BIOCHEMICAL  
TECHNIQUES, BIostatISTICS**

*Q.P. Code : 202043*

**Time : Three hours**

**Maximum : 100 marks**

**Draw suitable diagram wherever necessary**

**Answer ALL questions**

**I. Essay questions : (2 x 20 = 40)**

1. Describe in detail the structure, classification and functions of immunoglobulins.
2. Name the plasma/RBC buffers and urine buffers. Describe the role of respiratory system and the role of kidney in the maintenance of acid base balance.

**II. Write short notes on : (10 x 6 = 60)**

1. Tonometry.
2. Chemiluminescence.
3. Reference materials.
4. Uronic acids and sugar alcohols.
5. Ion exchange chromatography.
6. Evaluation of diagnostic test.
7. ELISA.
8. Membrane proteins.
9. Sterols.
10. Measurement of radioactivity.

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September 2009

[KV 148]

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**Draw suitable diagram wherever necessary**

**Answer ALL questions**

**I. Essay questions :** (2 x 20 = 40)

1. Describe the structure and types of Collagen. Add a note on the relationship of function to the three dimensional structure.
2. Describe the chemical composition, classification of Lipoproteins and their separation techniques.

**II. Write short notes on :** (10 x 6 = 60)

1. Ion selective electrodes.
2. Blotting techniques.
3. Sphingolipids.
4. Biological role of Dextrin and Cellulose.
5. Gel filtration Chromatography.
6. Computer applications in Clinical chemistry.
7. Correlation coefficient and coefficient of variation.
8. Tandem mass Spectrometer.
9. Synthetic Nucleotides.
10. Flame emission photometry.

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[KW 148]

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**Time : Three hours**

**Maximum : 100 marks**

**Draw suitable diagram wherever necessary**

**Answer ALL questions**

**I. Essay questions :**

**(2 x 20 = 40)**

1. Describe the structural organization of adult hemoglobin. Explain the changes occurring at the molecular level during oxygenation.
2. Describe the principles, types and applications of radio immuno assay. How does this technique compare with ELISA techniques?

**II. Write short notes on :**

**(10 x 6 = 60)**

1. Arachidonic acid derivatives and their functions.
2. Glucose biosensors.
3. Working principle of atomic absorption spectrophotometry.
4. Liposomes.
5. SDS – polyacrylamide gel eletrophoresis.
6. Dietary fibre.
7. Dry chemistry methods.
8. Evaluation of a method of estimation.
9. Scintillation detectors.
10. Determination of primary structure of protein.

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