

[LQ 148]

AUGUST 2020  
(MAY 2020 SESSION)

Sub. Code: 2043

**M.D. DEGREE EXAMINATION  
BRANCH XIII – BIOCHEMISTRY**

**PAPER I – PHYSICAL AND ORGANIC ASPECTS OF BIOCHEMISTRY,  
INSTRUMENTATION, BIOCHEMICAL TECHNIQUES, BIOSTATISTICS**

*Q.P. Code: 202043*

**Time: Three Hours**

**Maximum: 100 Marks**

**I. Essay Questions:**

**(2 x 15 = 30)**

1. Discuss in detail the principle and applications of Tandem Mass Spectrophotometry.
2. Explain the principle types and clinical application of Electrophoresis

**II. Short notes:**

**(10 x 5 = 50)**

1. Urine preservatives and urinary collection
2. Use of radio isotopes in diagnostic tests and its disposal
3. Functions of glycosaminoglycans
4. Briefly describe the structure and types of collagen and add a note on disorders due to defects in collagen synthesis
5. Requirements for implementation of internal quality control programme in a laboratory . How to monitor and interpret the IQC values ?
6. Explain the biochemical and molecular basis of sickle cell anaemia.
7. Mucopolysaccharides and their biological significance
8. Principle and application of Competitive ELISA
9. Biochemical basis of antibody heterogeneity
10. Functions of hemoglobin.

**III. Reasoning Out:**

**(4 x 5 = 20)**

1. Freshly prepared glucose standard is not preferred in a clinical chemistry lab.
2. Acidosis can precipitate a crisis in sickle cell.
3. Proline is not compatible in alpha helix
4. Direct ISE method is preferred for the measurement of serum sodium in the presence of hyperproteinemia and hyperlipoproteinemia?

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