(LG 148) **APRIL 2015** **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 10 = 20)**

1. Discuss in detail the principle and applications of Atomic Absorption Spectrophotometry.
2. What are the steps in verifying a validated analytical method of a manufacturer before introducing it into your laboratory?

II. Short Questions: **(8 x 5 = 40)**

1. What are 'Limit Checks" and their utility as part of quality assurance?
2. SI units of measurement.
3. Immuno Electrophoresis.
4. Factors affecting oxygen binding to hemoglobin.
5. Westgard Multi QC rules and their interpretation.
6. Isotopic and Non Isotopic labels used in Immunoassay techniques.
7. How will you assess the performance characteristics of a spectrophotometer?
8. Management of various categories of biomedical and biohazardous waste in a clinical laboratory.

III. Reasoning Out: **(4 x 5 = 20)**

1. Individuals with HbS are protected against infection with Plasmodium – Why?
2. Why is stored blood not a good oxygen transporter and how is it overcome in blood banks?
3. Why is a freshly prepared standard solution of glucose allowed to stand overnight before it can be used as a standard in a clinical chemistry lab?
4. Internal Quality Control is a measure of Random Error whereas external Quality Control is a measure of Systematic error – Justify.

IV. Very Short Answers: **(10 x 2 = 20)**

1. ROC Curve and its significance.
2. What are 'domains' in the structure of proteins?
3. Phenylisothiocyanate and its use.
4. Classification of aminoacids based on metabolic fate with examples.
5. What are Human Anti Mouse Antibodies (HAMA) and what is their significance in immunoassay?
6. Analytical Measurement Range.
7. Plasmalogens and their biochemical role.
8. State any 2 functions of Glycosaminoglycans in a cell.
9. Explain Diasterioisomers with an example.
10. Hb M disease.

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