BIOCHEMISTRY

PAPER – I

BIO/D/16/03/I

Time : 3 hours
Max. Marks : 100

Important instructions:

- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

1. Write the step(s) with the reaction(s) used in the in-vitro synthesis of a peptide having sequence 'ala-cys-glu'. 10

2. a) Classify glycerolipids. 1+(3+3+3)
   b) Structure, functions and clinical significance of glycerolipids.

3. a) List five heteropolysaccharides. 2.5+(2.5+5)
   b) Mention their structures and diseases associated with their defective metabolism.

4. a) Define prenatal fetal screening of diseases. 2+2+6
   b) List biochemical test(s) performed for fetal screening.
   c) Mention how those tests are interpreted?

5. a) How are glomerular, tubular and endocrine functions of kidney assessed by biochemical investigation(s)? 6+4
   b) How is adequacy of hemodialysis assessed by laboratory tests?

6. Define and write the use(s) of: 2.5x4
   a) Abzymes.
   b) Isoform of enzymes.
   c) Isoenzymes.
   d) Ribozymes.

7. List the Westgard rejection rules. Add a note on 'external quality control'. 7+3

8. a) How is reference range of a laboratory parameter established? 5+5
   b) Define diagnostic window of laboratory parameter. Compare diagnostic window of CK-MB and myoglobin for acute myocardial infarction.

9. a) Define 'null hypothesis'. 2+5+3
   b) List the test(s) of comparison used to reject null hypothesis.
   c) What does 'p value' signify?

10 a) How is correlation analysis performed for a nonparametric data? 6+4
   b) Compare and contrast 'correlation analysis' with 'regression analysis'.

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