AU–175

B.Sc. Part—III (Semester—VI) Examination

6S : BIOCHEMISTRY

(Immunology and Clinical Biochemistry)

Time : Three Hours] [Maximum Marks : 80

Note :— (1) **ALL** questions are compulsory and carry equal marks except question no. 1 which carries 8 marks.

(2) Draw a neat labelled diagram wherever necessary.

1. (A) Fill in the blanks : 2

(i) _____ is the only antibody which can cross placenta.

(ii) Antibody mediated immunity is known as _____.

(iii) _____ is a marker enzyme of prostate cancer.

(iv) Enzymes normally present in plasma in significant quantity is known as _____.

(B) Choose correct alternative : 2

(i) Which enzyme is diagnostic in acute pancreatitis ?

(a) Amylase

(b) Acid phosphatase

(c) Alkaline phosphatase

(d) Creatine kinase

(ii) LDH1 and LDH2 isoenzymes are significantly elevated in blood in :

(a) Nephrotic syndrome

(b) Infective hepatitis

(c) Myocardial infraction

(d) Diabetes mellitus

(iii) The half life of IgG is :

(a) 2-3 days

(b) 5-6 days

(c) 8-10 days

(d) 20-25 days

(iv) Complement system can be activated by binding of antigen to :

(a) IgA

(b) IgD

(c) IgE

(d) IgM

(C) Answer in **one** sentence : 4

(i) Define isoenzymes.

(ii) Define hypoglycemia.

(iii) Define antigen.

(iv) Define monoclonal antibody.

2. (a) Explain in brief factors determining antigenicity. 4

(b) Describe structure and properties of IgG. 4

(c) Explain function and properties of IgM. 4

OR

(p) Explain in brief component of innate immunity. 4

(q) Explain different types of antigens. 4

(r) Describe structure and function of IgA. 4

3. Explain with example mechanism and application of precipitation and add a note on RIA. 12

OR

Describe with example mechanism and application of agglutination and a note on ELISA. 12

4. Explain in detail classical and alternative pathways with suitable diagram. 12

OR

Describe in detail four types of hypersensitivity. 12

5. (a) Explain different units of enzymes used in clinical biochemistry. 4

(b) Discuss in brief external and internal quality control. 4

(c) Explain advantages of automation in clinical laboratory. 4

OR

(p) Explain different units used to express concentration of solutions in clinical laboratory. 4

(q) Describe in brief scope of clinical biochemistry in diagnosis. 4

(r) Comment on autoanalyser. 4

6. (a) Describe creatinine clearance test. 4

(b) Describe collection and presentation of blood, serum and plasma. 4

(c) Give normal values of any eight important constituents in blood. 4

OR

(p) Describe collection and preservation of urine and CSF. 4

(q) Explain urea clearance test. 4

(r) Give normal values of important constituents in urine and CSF. 4

7. (a) Explain in brief glycogen storage diseases. 4

(b) Discuss diagnostic applications of LDH and CPK. 4

(c) Comment on hyperglycemia. 4

OR

(p) Explain with example functional and non-functional plasma enzymes. 4

(q) Write in brief on statorrhea and albinism. 4

(r) Comment on diagnostic application of lipase and amylase. 4

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