AS–1489

B.Sc. (Part—III) Semester—VI Examination
BIOCHEMISTRY
(Immunology and Clinical Biochemistry)

Time : Three Hours] [Maximum Marks : 80

N.B. :— (1) **ALL** questions are compulsory and carry equal marks, except Q. No. **1** which carries **8** marks.

(2) Draw a well labelled diagram wherever necessary.

1. (A) Fill in the blanks :—

(i) The largest immunoglobulin is _____. ½

(ii) The immunoglobulin having longest half life is _____. ½

(iii) pH of normal urine is _____. ½

(iv) Tumor marker enzyme in prostatic cancer is _____. ½

(B) Choose the correct alternative :—

(i) Which enzyme is diagnostic in acute pancreatitis ? ½

(a) Amylase (b) Acid phosphatic

(c) Kinase (d) LDH

(ii) Amount of glucose given to the patient during GTT is : ½

(a) 10 gm (b) 30 gm

(c) 60 gm (d) 75 gm

(iii) The half life of IgG is : ½

(a) 2 to 3 days (b) 5-6 days

(c) 8 to 10 days (d) 20 to 25 days

(iv) MHC class I proteins are present on the surface of : ½

(a) B cells only (b) T cells only

(c) Macrophages only (d) All cells

(C) Answer in **ONE** sentence each :—

(i) Define agglutination 1

(ii) Define antigen 1

(iii) Define isoenzyme 1

(iv) Define hyperglycemia 1

2. (a) Describe innate immunity. 4

(b) Explain humoral immunity. 4

(c) Describe structure and function of IgM. 4

OR

(p) Explain structure and function of IgA. 4

(q) Describe type of antigens. 4

(r) Explain differences between active and passive immunity. 4

3. (a) Explain immunodiffusion. 4

(b) Describe complement fixation. 4

(c) Explain RIA. 4

OR

(p) Describe application of agglutination. 4

(q) Explain toxin-antitoxin reaction. 4

(r) Describe immunoelectrophoresis. 4

4. (a) Describe hybridoma technology. 4

(b) Describe classical pathway for complement activation. 4

(c) Explain type-I hypersensitivity. 4

OR

(p) Explain serum sickness and Arthus reaction. 4

(q) Explain Type IV hypersensitivity. 4

(r) Describe alternative pathway for complement activation. 4

5. Describe in detail concept and scope of clinical Biochemistry and add a note on quality control. 12

OR

Explain manual versus automation in clinical laboratory and add a note on autoanalyzers. 12

6. Explain in detail collection and preservation of biological fluid and add a note on urea clearance test. 12

OR

Explain in detail chemical analysis of blood and urine. 12

7. (a) Describe diagnostic application of enzyme in liver diseases. 4

(b) Describe with example plasma functional and non-functional enzymes. 4

(c) Explain hypoglycemia. 4

OR

(p) Describe diagnostic application of enzyme in heart diseases. 4

(q) Explain application of SGOT and SGPT in clinical diagnosis. 4

(r) Explain in brief glycogen storage diseases. 4

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