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 :

(i) The most abundant immunoglobulin in plasma is _____.

(ii) An immunoglobulin found in external secretions is _____.

(iii) Immunoglobulins are secreted by _____.

(iv) The portion of the antigen molecule which is recognised by antibody is known as _____. 2

(B) Choose the correct alternative :

(i) Normal range of serum creatinine is :

(A) 0.6 – 1.5 mg/dl (B) 9 – 11 mg/dl

(C) 20 – 25 mg/dl (D) 30 – 35 mg/dl

(ii) In the fasting adult, the sugar in CSF is :

(A) 15 – 45 mg/dl (B) 45 – 80 mg/dl

(C) 70 – 110 mg/dl (D) 80 – 120 mg/dl

(iii) Tumor marker enzyme in prostate cancer is :

(A) Alkaline phosphatase (B) Acid phosphatase

(C) CPK (D) LDH

(iv) Which preservative is added to urine to be used for biochemical analysis ?

(A) HCl (B) Toluene

(C) Thymol (D) All of the above 2

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

(i) Define Acid.

(ii) Define Thermodynamics.

(iii) Define Diffusion.

(iv) Define Antibody. 4

2. (a) Explain in brief classification of immunity. 4

(b) Describe the structure of IgG. 4

(c) Comment on component of cellular immunity. 4

OR

(p) Describe structure and properties of IgA. 4

(q) Explain properties and functions of IgG. 4

(r) Explain in brief activation B-cells. 4

3. (a) Explain principle of RIA. 4

(b) Describe mechanism of precipitation. 4

(c) Explain complement fixation. 4

OR

(p) Write about applications of agglutinations. 4

(q) Describe applications of ELISA. 4

(r) Write about toxin-antitoxin reaction. 4

4. Describe in detail mechanism of Type-I and Type-II hypersensitivity with examples. 12

OR

Describe in detail hybridoma technology. 12

5. (a) Explain with example the concept of molarity and molality. 4

(b) Describe quality control in clinical laboratory. 4

(c) Explain in brief role of Clinical Biochemistry in diagnosis. 4

OR

(p) Give difference between manual and automation in Clinical Biochemistry. 4

(q) Describe different units and abbreviations used in Clinical Biochemistry. 4

(r) Discuss the significance of autoanalyzer in Clinical Laboratory. 4

6. Describe in detail collection and preservation of biological fluids. 12

OR

Describe in detail chemical analysis of blood and urine. 12

7. (a) Describe causes and types of albinism. 4

(b) Comment on diagnostic applications of SGOT and SGPT. 4

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

OR

(p) Write about hyperglycemia. 4

(q) Describe isoenzymes of LDH. 4

(r) Comment on diagnostic applications of acid phosphatase. 4