

**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 \_\_\_\_\_.

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(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