

This question paper contains 4 printed pages]

Your Roll No.

1920

B.Sc. (Prog.)/II

E

LS-203 : CELL BIOLOGY, BIOCHEMISTRY

AND IMMUNOLOGY

(Admissions of 2008 and onwards)

Time : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Answer five questions in all, including

Q. No. 1 which is compulsory.

I. (a) Define the following terms :

(i) Opsonization

(ii) Heterochromatin

(iii) Zwitterion

(iv) NK cells

(v) Phagocytosis

(vi) Micro tubule.

6

P.T.O.

(b) Differentiate between the following terms :

(i) Active immunity and passive immunity

(ii) Transamination and deamination

(iii) K_m and V_{max}

(iv) Cilia and flagella

(v) Gluconeogenesis and Glycolysis.

10

(c) Expand the following abbreviations :

(i) GABA

(ii) SER

(iii) ADCC

(iv) PMN

(v) TPP

(vi) CALT.

3

(d) State True/False :

(i) Chloroplast is a semiautonomous organelle

(ii) Immunoglobulin involved in Type-I hypersensitivity is IgA.

- (iii) Urea cycle takes place partly in cytosol and partly in mitochondria
- (iv) Cysteine and cystine are sulphur containing amino acids. 2
- (e) State the function(s) of :
- (i) Histamine
- (ii) Catalase
- (iii) Succinate dehydrogenase
- (iv) Carnitine. 4
- (f) Mention the contribution(s) of the following scientists :
- (i) E. Jenner
- (ii) D. Koshland. 2
2. (a) Explain the factors affecting the rate of catalyzed reaction enzyme. 8
- (b) Explain the induced fit theory of enzyme action. 4
3. (a) Draw and describe the ultrastructure of chloroplast. 6
- (b) Discuss the process of subcellular fractionation. 6

4. (a) What is 'acquired' immunity' ? Discuss types of acquired immunity with suitable examples. 7
- (b) Explain clonal selection theory. 5
5. Give complete enzymology, biochemistry and bioenergetics of TCA cycle. 12
6. (a) What is Type-I hypersensitivity ? How is it different from Type-IV hypersensitivity ? 8
- (b) What are peroxisomes ? What role do they play in the cell ? 4
7. Write short notes on any *three* of the following :
- (i) Oxidative phosphorylation
- (ii) Haptens
- (iii) Fluid mosaic model
- (iv) Gytotoxic T-lymphocytes
- (v) Repetitive DNA. 3×4