

[This question paper contains 4 printed pages.]

220

Your Roll No. ....

B.Sc. Prog. / II

C

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.*

1. (a) Define the following terms :

- (i) Epitope
  - (ii) Repetitive DNA
  - (iii) Coenzymes
  - (iv) Zymogen
  - (v) Dynein
  - (vi) Phagocytosis
- (6)

P.T.O.

(b) Differentiate between the following pairs of terms :

- (i) Deamination and Transamination
- (ii) T-lymphocytes and B-lymphocytes
- (iii) Leukoplasts and chromoplasts
- (iv) Primary immune response and Secondary immune response
- (v) Ionic bond and Hydrogen bond (10)

(c) Expand the following abbreviations :

- (i) TNF
- (ii) FMN
- (iii) APC
- (iv) GERL
- (v) ATP
- (vi) SER (3)

(d) State the function of :

- (i) Mast cells
- (ii)  $\text{Na}^+/\text{K}^+$  ATPase
- (iii) Cytochromes
- (iv) Catalase
- (v) F1 Particle (5)

- (e) Mention the contribution(s) of the following scientists :
- (i) Benda
  - (ii) E. Knoop
  - (iii) Robertson (3)
2. (a) What is Enzyme inhibition ? Discuss various types of enzyme inhibitions with suitable examples. (8)
- (b) Describe the mechanism of enzyme action. (4)
3. (a) Discuss the properties of epitopes of B-lymphocytes and T-lymphocytes. (8)
- (b) Define Type-1 hypersensitivity reaction. Give suitable examples of allergens causing type-1 hypersensitivity. (4)
4. (a) Describe the ultrastructure of cilia with the help of labelled diagram. (6)
- (b) Discuss the technique of radioautography and its applications. (6)
5. What is Haematopoiesis ? Discuss the role played by various cells in the immune system. (12)

6. (a) Describe  $\beta$ -oxidation of fatty acid. (8)
- (b) What is the energy yield of  $\beta$ -oxidation of one molecule of palmitic acid? (4)
7. Write short notes on **any three** of the following :
- (i) Clonal Selection Theory
  - (ii) Density Gradient Centrifugation
  - (iii) Ketone Bodies
  - (iv) Glycogenolysis
  - (v) Golgi apparatus (4+4+4)