

[This question paper contains 4 printed pages.]

Your Roll No.

5115

B

B.Sc. Prog. / II
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.)

Section A

(Cell Biology)

25 Marks

Answer *Three* questions in all,
including Q. No. 1 which is compulsory.

1. (a) Distinguish between the following : 6
 - (i) Photosynthesis and Photorespiration
 - (ii) Primary Culture and Secondary Culture
 - (iii) Calvin cycle and Citric acid cycle.
- (b) Answer the following in brief : 3
 - (i) Name the site of light reaction in chloroplast.
 - (ii) Which cell organelle is also known as 'suicidal bag' of cell?
 - (iii) What is callus?

[P. T. O.]

2. (a) Give an account of electron transport system in mitochondria. 5
- (b) Draw a labelled diagram of the ultrastructure of a chloroplast. 3
3. (a) Discuss the role of golgi complex in cell secretion. 5
- (b) What is PAGE? Briefly describe its application in cell biology. 3
4. Write short notes on any *two* of the following : 4+4
- (a) Cell fractionation
- (b) Autoradiography
- (c) Peroxisomes.

Section B

(Biochemistry)

25 Marks

Attempt *Three* questions in all,
including Q. No. 1 which is compulsory.

1. (a) Define : 6
- (i) Turnover number of an enzyme
- (ii) Deamination
- (iii) Holoenzyme
- (iv) Isoelectric Point
- (v) Substrate linked phosphorylation
- (vi) Prosthetic group.

- (b) State the function of : 3
- (i) ATPase
 - (ii) Cytochrome oxidase
 - (iii) Lipase.
2. (a) Discuss the mode of action of enzyme. 4,4
- (b) Briefly explain Ketogenesis. 4,4
3. (a) How does C_{16} Palmitate gets catabolized to acetyl CoA? 6,2
- (b) List the enzymes of gluconeogenesis. 6,2
4. Write short notes on any *two* of the following : 4,4
- (i) Conversion of pyruvate to acetyl CoA
 - (ii) Ammonia toxicity
 - (iii) Significance of Pentose Phosphate Pathway.

Section C

(Immunology)

25 Marks

Attempt *Three* questions from Section C, including Q. No. 1 which is compulsory.

1. (A) Define the following : 2
- (1) Apoptosis
 - (2) Hapten.

- (B) Expand the following : 4
- (i) MHC
 - (ii) DTH
 - (iii) RIA
 - (iv) ADCC.
- (C) Differentiate between : 3
- (i) Active and Passive immunity.
 - (ii) Primary and Secondary lymphoid organs.
2. (a) Explain the basic attributes of an acquired immune response not exhibited by an innate immune response. 4
- (b) What is a BCR? Write the functions of B cells. 4
3. (a) What are APCs? What is their significance? 3
- (b) How does a Primary Immunodeficiency disease differ from a Secondary Immunodeficiency disease? Give one example of each. 5
4. Write short notes on : 4,4
- (a) Clonal Selection theory
 - (b) Auto-immunity.