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Your Roll No

5180

B.Sc. Prog. / II J
LS-203 : CELL BIOLOGY,
BIOCHEMISTRY AND IMMUNOLOGY
(NC – 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) Expand the following abbreviations
- | | | |
|------------|-----------|----------|
| (i) NADP | (ii) GLC | |
| (iii) PAGE | (iv) PFK | |
| (v) GALT | (vi) SCID | 3 |
- (b) Differentiate between the following terms
- | | |
|---|-----------|
| (i) Glucogenic amino acid and ketogenic amino acid | |
| (ii) Oxidative phosphorylation and substrate level of phosphorylation | |
| (iii) Primary immune response and secondary immune response | |
| (iv) Catalase and Catheprins | |
| (v) Glyoxisome and Peroxisome | 10 |

(c) Match the following

A	B	
Coenzyme	RER	
Allosteric enzyme	Chloroplast	
Granum	Fatty acids	
β -glucosidase	PFK	
Lipase	NAD	
Microsomes	Lysosome	3

(d) Mention the contributions of the following scientists .

- (i) Benda
 - (ii) E Knoop
- 2

(e) Say True/False .

- (i) Removal of thymus in neonatal stage will not have any adverse effect.
 - (ii) Mitochondria is a semiautonomous organell.
 - (iii) Gluconeogenesis occurs in kidney cortex.
 - (iv) Urea cycle takes place partly in cytoplasm and partly in mitochondria.
- 2

(f) Define the following terms .

- (i) Immunogenecity
 - (ii) Turnover number of an enzyme
 - (iii) Anaplerotic reaction
 - (iv) Deamination
 - (v) Amphipathy
- 5

(g) Mention the location of lymph nodes in human body.

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2. (a) How does C_{16} Palmitate gets catabolized to acetyl CoA ? **6**
- (b) Describe the effect of reversible inhibitors on an enzyme activity. Give examples **6**
3. Describe the fine structure of Mitochondria and how does it help in ATP synthesis ? **12**
4. (a) Draw and label the structure of Golgi complex. **3**
- (b) How does golgi complex enrout primary lysosomes into cells ? **3**
- (c) Describe various polymorphic forms of lysosomes and how peroxisomes differ from lysosomes. **6**
5. (a) Describe the role of following cells in immune responses .
- (i) B cells
- (ii) Neutrophils
- (iii) T cells
- (iv) Dendritic cells
- (v) Eosinophils
- (vi) Natural killer cells **6**
- (b) Define Allergy. How does it develop in an individual ? Mention some allergic reactions. **6**

- 6 (a) What is the role of $\text{NADPH} + \text{H}^+$, $\text{NADH} + \text{H}^+$, and Ribose 5P in cells ? 3
- (b) How do Ribose 5P and $\text{NADPH} + \text{H}^+$ are synthesized ? 5
- (c) Describe the process of clonal selection 4
7. Write short notes on any **three** of the following
- (i) Transamination and Deamination
- (ii) Ultrastructure of chloroplast.
- (iii) Organ specific autoimmune diseases
- (iv) Radio isotopes used in Biological systems
- (v) Gel Electrophoresis 4, 4, 4
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