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Your Roll No.....

1345.

B.Sc. (Hons.)/II

A

ZOOLOGY—Paper IV

(Biological Chemistry and Immunology)

(Admissions of 2004 and onwards)

Time : 3 Hours

Maximum Marks : 55

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

Attempt *Five* questions in all, including

Q. No. 1 which is compulsory.

1. (a) Expand the following : 2

(i) HAART

(ii) PFK-1

(iii) TAP

(iv) UDP glc

(b) Define the following : 3

(i) Prosthetic group

(ii) Phosphagens

(iii) Molecular chaperone.

P.T.O.

- (c) Distinguish between the following : 6
- (i) Thiolase and Thiokinase
 - (ii) Isotype and Allotype
 - (iii) Primary and secondary lymphoid organs.
- (d) Write the physiological importance of : 2
- (i) Superoxide dismutase
 - (ii) Pyruvate Carboxylase.
- (e) Write the structural formulae of : 2
- (i) Lysine
 - (ii) Galactose
- (f) Explain very briefly : 3
- (i) Graves' disease
 - (ii) Why clinicians monitor the level of skin-test reactivity in HIV-infected individuals ?
 - (iii) When blood samples are taken for measurement of glucose, it is collected in tubes containing fluoride.
- (g) State the contributions of : 1
- (i) E. Behring and S. Kitasato
 - (ii) F. Cori.

2. Define oxidative phosphorylation. Diagrammatically show the flow of electrons through the complexes of the respiratory chain and sites of inhibition by different poisons/chemicals. 1,4,4
3. Describe in detail the hexose monophosphate shunt. Discuss its physiological significance. 7,2
4. (a) Explain the various orders of organization of protein structure and their significance.
(b) Give an account of oxidative deamination in protein catabolism. 7,2
5. (a) Draw a labelled diagram showing functional histology of lymph node. Discuss the role of lymph node in mounting an immune response.
(b) Describe the structure and function of IgA. 6,3
6. (a) Show, with a diagram, the steps leading to activation of the complement system by different pathways. (No description required).
(b) Summarize the major functions of the complement system. 5,4

7. Write short notes on any *three* of the following : 3,3,3

(i) Functional significance of cholesterol and its derivatives.

(ii) RIA technique and its applications

(iii) Vaccines

(iv) β -oxidation

(v) Induced fit theory of enzyme action.