2018

M.Sc. 2nd Semester Examination

ZOOLOGY

PAPER—ZOO-202

Subject Code—35

Full Marks : 40

Time : 2 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

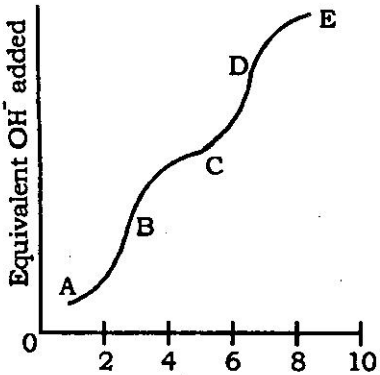
Group–A

(Biochemistry)

1. Answer any *two* questions of the following : 2×2

(a) How many H^+ ions and OH^- ions are present in 250 ml of a solution of pH 3 ?

(b) The letters A through E designate certain regious on the titration curve for glycine. Explain which one of the following statements concerning the curve given below is correct.



(i) Point A represents the region where glycine is deprotonated.

(ii) Point B represents a region of minimal buffering.

(iii) Point C represents the region where the net charge of glycine is zero.

(iv) Point D represents the pK of glycine's carboxyl group.

(v) Point E represents the pI for glycine.

(c) What is the driving force for tertiary structure of protein ?

(d) What is phosphoryl transfer potential ?

2. Answer any *two* questions of the following : 2×4

(a) Illustrate the mechanism of Enzyme action using Lys and a His-Glu dyad respectively at its active site.

(b) Write down a brief note on Ramachandran Plot. Delineate one secondary protein conformation with the help of the plot. 2+2

(c) What do you mean by folding patterns of β-sheet ? Write a note on super secondary structure of protein. 2+2

(d) State the mechanism of amino transferase in transamination of α-ketoglutarate.

3. Answer *one* question of the following : 1×8

(a) Illustrate the mechanism of electron flow from ubiquinone to cytochrome C in electron transport chain. What is proton motive force ? 6+2

(b) How does oxidation of monounsaturated fatty acids differ from polyunsaturated fatty acid. Explain with diagram. What do you mean by ω (omega) oxidation ? 6+2

Group–B

(Parasitology)

4. Answer any *two* questions of the following : 2×2

(a) Define phoresis and hyperparasite with example.

(b) What do you mean by Mechanical and Biological transmission ?

(c) What is papatasi fever ?

(d) Differentiate amastigote and promastigote form of *Leishmania* with diagram.

5. Answer any *two* questions of the following : 2×4

(a) Write the scientific name of one hard tick and one soft tick. Add a note on role of tick pheromones. 1+3

(b) Enumerate the ultrastructural features of the costode tegument.

(c) Describe briefly the host and environment factors in relation to epidemiology of filariasis.

(d) "The vertebrate gut is a suitable habitat for microorganism" — Discuss.

6. Answer *one* question of the following : 1×8

(a) Describe briefly the life cycle and pathogenecity of *Schistosoma.* 6+2

(b) (i) Write short notes on VSG gene.

(ii) Describe RBC surface penetration mechanism of *Plasmodium* sporozoites. 3+5