

2018

ZOOLOGY – HONOURS

Fourth Paper

Unit-I

(ANIMAL PHYSIOLOGY AND BIOCHEMISTRY)

Full Marks : 50

The figures in the margin indicate full marks.

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

Answer question No. 1 and any two questions from Group A and any two questions from Group B.

1. Answer *any five* questions :

2×5

- (a) State two heat conservation mechanism in organism of cold desert.
- (b) State two important functions of giant nerve fibre of molluscs.
- (c) Write the note of TMAO in osmoregulation.
- (d) Define aestivation.
- (e) State the biochemical significance of α – 1.6–glucosidase.
- (f) What is glycoprotein? Give one example.
- (g) Define unsaturated fatty-acid. Give an example.
- (h) Write the full form of GA BA and state one important function of it.

Group A

2. (a) What is Bohr effect?

(b) Distinguish between R– States and T– States of haemoglobin.

(c) How oxygen is transported in blood?

2+3+5

3. (a) Discuss the roles of podocytes and different regions of nephric tubules in urine formation.

(b) Add notes on ammonia and creatinine in excretion.

6+2+2

4. (a) Describe the molecular structure of troponin.

(b) How excitation-contraction coupling takes place during muscle contraction?

4+6

Please Turn Over

5. (a) State how phototransduction occurs in human?
(b) Distinguish between light and dark adaptations in human. 6+4

Group B

6. (a) Describe the process of neoglucogenesis starting from pyruvate mentioning the names of required enzymes.
(b) Distinguish between oxidative and non-oxidative deamination. 6+4
7. (a) Describe the Purine Salvage Pathway in brief.
(b) Discuss about the process of β -oxidation of palmitic acid, mentioning necessary enzymes and co-factors. 4+6
8. (a) "Digits of an E.C. number has specific significance".— Justify the statement with an example.
(b) What happens when $[S] = K_m$ and $[S] > K_m$ in enzyme-substrate reaction.
(c) Define competitive inhibitor, with example. 4+(2+2)+2
9. (a) Define neurotransmitter. Describe the structure and function of glutamate and dopamine.
(b) Mention the structure of complexes in Electron transport Chain. 2+3+3+2
-