

2021

ZOOLOGY — HONOURS

Fourth Paper

(Unit – I)

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) What is Bohr effect?
 - (b) Why Kreb's cycle is also termed as Citric Acid Cycle?
 - (c) Define ammonotelic and uricotelic animals with examples.
 - (d) What are the functions of rod and cone cells in human?
 - (e) Mention the most important functional significance of giant nerve fibres in molluscs.
 - (f) What do you mean by saturated and unsaturated fatty acids?
 - (g) What is coenzyme? Give example.
 - (h) What do you mean by neurotransmitter?

Group – A

2. (a) Discuss briefly the process of carbon-di-oxide transport from tissue to lungs. 6
- (b) What is Haldane effect? 2
- (c) State the significance of oxygen dissociation curve. 2
3. (a) Distinguish between hibernation and torpor. 2
- (b) Discuss the physiological process of hibernation in amphibians. 5
- (c) What do you mean by countercurrent mechanism in urine formation? 3
4. (a) Describe the neuromuscular junction with diagram. 2+1
- (b) Elaborate saltatory conduction of nerve impulse in myelinated axons. 4
- (c) Briefly describe the structure of ommatidia. 3

Please Turn Over

5. (a) What do you mean by photopic and scotopic vision? 2+2
(b) Describe the events involved in phototransduction in rod cells by a flowchart. 6

Group – B

6. (a) Describe glycogenesis schematically. 3
(b) Describe the process of transamination with example. 3
(c) Write in brief about non-oxidative deamination. 4
7. (a) Briefly describe the process of ETS/ETC. 4
(b) Describe the process of oxidative phosphorylation. 3
(c) Explain EC number with a suitable example. 3
8. (a) What do you mean by 'active site' of an enzyme? 2
(b) State the role of pH on enzyme activity. 3
(c) Derive the Michaelis-Menten equation. 5
9. (a) Write schematically the process of β -oxidation of palmitic acid. 6
(b) How many ATP are produced in the above process? 2
(c) Mention the role of carnitine in β -oxidation. 2
-