

2020

(Held in 2021)

ZOOLOGY

(Major)

Paper : 5.2

Full Marks : 42

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

GROUP—A

(Marks : 21)

1. Answer the following questions as directed :

1×2=2

(a) _____ is an enzyme associated with the hemoglobin in RBC.

(Fill in the blank)

(b) α -D-glucopyranosyl (1 \rightarrow 2) β -D- fructofuranose is popularly known as

(i) maltose

(ii) lactose

(iii) sucrose

(iv) xylose

(Choose the correct option)

2. Write very brief answer of the following :

2 \times 2=4

(a) Differentiate between euchromatin and heterochromatin.

(b) Write the importance of pH homeostasis in living body.

3. Answer any *three* of the following :

5 \times 3=15

(a) Discuss the factors which influence enzyme action.

(b) State the process of β -oxidation of fatty acids.

(c) Describe the function of ribosome as ribozyme.

(d) Enumerate on the physiological importance of polysaccharides.

(e) Explain how the liver catabolizes toxic ammonia into urea.

(3)

GROUP—B

(Marks : 21)

4. Answer any *three* of the following (maximum word limit 300) : 7×3=21

- (a) How do pharmaceutical drugs such as non-steroidal pain relievers work? Give explanation.
- (b) Lipids are the main components of cellular membranes; the bilayer structure is attributable to the special properties of the lipid molecules. Elaborate.
- (c) The translocation of hydrogen ions in the matrix space can only be through the inner mitochondrial membrane through a membrane protein called ATP synthase. Explain the theory that explains the generation of ATP through this process.
- (d) Explain how the second law of thermodynamics applies to living system.
- (e) Chromatin is a highly dynamic structure. How is this structural plasticity and dynamics attained?

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