

2015

ZOOLOGY

(Major)

Paper : 5.2

Full Marks : 60

Time : 3 hours

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

1. Answer the following as directed (any seven) :

1×7=7

- (a) What is reducing sugar?
- (b) Give the example of sulphur containing amino acids.
- (c) What is turnover number?
- (d) Define peptide bond.
- (e) What is proton motive force?
- (f) The quantitative study of transfer of energy and its interconversion in a biological system is known as _____.

(Fill in the blank)

(2)

(g) Stored fat is usually transported from one part of the body to another in the form of _____.

(Fill in the blank)

(h) Nucleoproteins are complex proteins formed by combination of _____.

(Fill in the blank)

(i) What do you mean by protein sparing function of carbohydrate?

2. Write very short answers (any four) : $2 \times 4 = 8$

(a) Explain activation energy and energy barrier.

(b) Write about haemoglobin buffer system.

(c) What are fats and oils?

(d) Explain zymase and zymogen.

(e) Write the differences between 70S ribosome and 80S ribosome.

(f) "Enzymes are biological catalyst." Justify the statement.

(g) Explain the normal solutions of acids and bases.

(3)

3. Answer in short (any *three*) : 5×3=15

(a) Describe mitochondrial electron transport system.

(b) Explain the fluid mosaic model of plasma membrane.

(c) Describe the structure of ATP molecule.

(d) Write a note on the biological significance of pH.

(e) Describe how chromatin gets assembled.

(f) Write about the important biological functions of protein.

Answer the following (any *three*) : 10×3=30

4. Describe in brief the laws of thermodynamics. How are these laws applicable in animal life? 5+5

5. Define enzyme. Describe different classes of enzyme giving examples for each class. 2+8

6. What do you mean by oxidative phosphorylation? Describe the chemiosmotic hypothesis of oxidative phosphorylation. 3+7

(4)

7. Describe the ornithine cycle of urea formation and add a note on its significance. 5+5
8. Describe the mechanism of β -oxidation of fatty acid and write about its energetics in brief. 6+4
