

2019

B.Sc.

3rd Semester Examination

ZOOLOGY (Honours)

Paper - C 7-T

(FUNDAMENTALS OF BIOCHEMISTRY)

Full Marks : 40

Time : 3 Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

1. Answer any *five* questions : 2×5=10
- (a) Differentiate between epimer and anomer. 2
 - (b) What do you mean by EC number of enzyme. 2
 - (c) What do you mean by iso electric point ? 2
 - (d) Differentiate between cofactor and prosthetic group. 2

[Turn Over]

- (e) What is HMP shunt ? 2
- (f) 'At higher temperature DNA can absorb more UV rays' — explain. 2
- (g) 'Cytosine can form 3 hydrogen bonds with Guanosine but adenine can form only 2 with thymine' — explain. 2
- (h) Differentiate between saturated and unsaturated fatty acid with example. 2

Group - B

2. Answer any *four* questions : 5×4=20

- (a) Define Gluconeogenesis. Give a schematic diagram of the reactions involved in Gluconeogenesis 1+4
- (b) (i) Compare A-, B- and Z- DNA.
- (ii) Name some unusual bases present in t-RNA. 3+2
- (c) Write the physiological role of non essential amino acids. Briefly describe the process of Oxidative deamination. 2+3

(d) Draw and describe the components of Electron Transport Chain. 2½+2½

(e) Write short notes on —

(i) ATP synthase

(ii) Glycogen

3+2

(f) A DNA segment contains 100 nucleotide base pairs.

(i) What is the length of DNA segment ?

(ii) Calculate the number of spirals in the molecule.

(iii) If there is a total of 70 Adenine base. Calculate the number of Guanine present in the segment. 2+1+2

3. Answer any *one* question :

10×1=10

(a) (i) Why is peptide bonds considered as partial double bonds ?

(ii) Draw and describe the secondary structures of protein.

[Turn Over]

(iii) 'Haemoglobin has quaternary structure but myoglobin don't'. — explain. 2+6+2

(b) Explain Michaelis - Menten equation of enzyme kinetics with proper derivation. Add a note on non competitive enzyme inhibition with suitable example. 7+3
