Total number of printed pages–7

3 (Sem–3/CBCS) ZOO HC 3

2022

ZOOLOGY

(Honours)

Paper : ZOO–HC–3036

(Fundamentals of Biochemistry)

Full Marks : 60

Time : Three hours

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

1. Answer the following questions : ***(any seven)*** 1×7=7

   (a) _____ types of bonds are present in oligosaccharides and polysaccharides. *(Fill in the blank)*

   (b) What is saponification number ?

   (c) Tertiary structure of proteins is stabilized by _____ bonds. *(Fill in the blank)*

Contd.

(d) _____ protein help in blood clotting. *(Fill in the blank)*

(e) Who coined the term enzyme for the first time ?

(f) Which enzyme convert glucose to ethyl alcohol ?

(g) _____ immunoglobulin can pass through the placenta. *(Fill in the blank)*

(h) Disulphide bonds are formed between

(i) Cysteine residues that are close together

(ii) Cystine residues that are close together

(iii) Proline residues that are close together

(iv) Tyrosine residues that are close together

(Choose the correct option)

(i) What are prions ?

(j) Name *two* essential amino acids.

(k) Name *one* glycogenic and *one* ketogenic amino acid.

(l) What are waxes ?

2. Answer the following questions : ***(any four)*** 2×4=8

(a) What is meant by amphipathic nature of phospholipids ?

(b) "Proteins are biological polymers." Explain.

(c) Mention the significance of Chargaff's rule.

(d) Explain cooperativity in allosteric enzymes.

(e) Write the difference between holoenzyme and isoenzymes.

(f) State the function of phospholipid.

(g) What is protein denaturation ?

(h) Briefly state the structure of immunoglobulin molecule.

3. Answer the following questions : ***(any three)*** 5×3=15

(a) How does an enzyme work ? Mention the characteristics of allosteric enzymes with proper illustrations.

(b) Explain the different types of enzyme regulation with proper examples.

(c) What is Cot curve ? Mention the significance of Cot curve. 2+3=5

(d) What is non coding RNA ? Mention the significance with few examples.

(e) What are steroids ? Describe the major steroids of biological significance.

(f) State the biological function of ammunoglobulin types.

(g) Why is sucrose a non-reducing sugar ? Explain the composition of glycogen.

(h) What is Ramachandran plot ? Briefly describe its importance with proper illustrations.

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

(a) Discuss the structure and the biological significance of disaccharide. Define polysaccharide and describe the structure of *three* biologically important homopolysaccharide. 5+5=10

(b) Classify lipids with examples. Describe various types of saturated and unsaturated fatty acids. 7+3=10

(c) Classify proteins on the basis of chemical composition, shape and solubility. Give examples of each classes.

(d) Describe the structure and function of different types of RNA.

(e) What is enzyme inhibition ? Explain different types of enzyme inhibition.

(f) Discuss enzyme classification with examples.

(g) What are terpenes ? Discuss the biological importance of different types of terpenes with proper examples. 2+8=10

(h) Define glycoconjugates. What are its classes and mention characteristics of each class with examples ? 2+8=10
