TDC (CBCS) Odd Semester Exam., 2022

ZOOLOGY

(Honours)

(3rd Semester)

Course No. : ZOOHCC-303T

(Fundamentals of Biochemistry)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

UNIT—1

1. Answer any *two* of the following questions : 2×2=4

(a) Define carbohydrates. What is meant by oligosaccharide?

(b) What is meant by optical isomerism?

(c) What is the storage form of carbohydrate in animals? What is meant by gluconeogenesis?

2. *(a)* Define polysaccharides. Differentiate between homoglycans and heteroglycans with examples. Discuss different types of polysaccharides and their biological significances. 1+2+3=6

Or

(b) Write short notes on the following : 4+2=6

(i) Monosaccharides

(ii) Glycoconjugates and glycosylation

UNIT—2

3. Answer any *two* of the following questions : 2×2=4

(a) What are triglycerides and why are they called neutral fats?

(b) What are sterols and what are their functional significances?

(c) What are meant by the process of saponification and saponification number?

4. *(a)* Classify lipids. Give a note on biologically important compound lipids with their chemical composition and functional significances. 3+3=6

Or

(b) Write short notes on the following : 3×2=6

(i) Saturated and unsaturated fatty acids

(ii) Steroids

UNIT—3

5. Answer any *two* of the following questions : 2×2=4

(a) Define amino acid. Why are amino acids called amphoteric compounds?

(b) Why are protein molecules also referred as polypeptides?

(c) What are meant by essential and non-essential amino acids? Cite examples.

6. *(a)* Discuss different types of structural organization of proteins. Give a note on bonds that stabilize the integrity of structure of proteins. 4+2=6

Or

(b) Write short notes on the following : 3×2=6

(i) Classification of amino acids

(ii) Conjugated proteins

UNIT—4

7. Answer any *two* of the following questions : 2×2=4

(a) What is nucleic acid and who first isolated it?

(b) How purines differ from pyrimidines? Give molecular structure of deoxyribose sugar.

(c) What is complementary DNA (cDNA) and what is its significance?

8. *(a)* What is nucleotide? Discuss double helical structural model of DNA. 2+4=6

Or

(b) What are the types of DNA and RNA? Elucidate. Give a note on denaturation of DNA. 4+2=6

UNIT—5

9. Answer any *two* of the following questions : 2×2=4

(a) Define enzyme. How are enzymes named?

(b) Give a brief note on specificity of enzyme action.

(c) What are coenzymes and isoenzymes?

10. *(a)* Classify enzymes. Discuss enzyme kinetics in context to Michaelis-Menten constant. 3+3=6

Or

(b) Write short notes on the following : 3×2=6

(i) Factors affecting the rate of enzyme catalyzed reactions

(ii) Mechanism of enzyme action

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