

**2018**

**CBCS**

**3rd Semester**

**ZOOLOGY**

**PAPER—C7T**

**(Honours)**

*Full Marks : 40*

*Time : 2 Hours*

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**Fundamentals of Biochemistry**

*Answer all questions*

**Group—A**

1. Answer any *five* questions :

5×2

(a) Why sucrose is considered as nonreducing sugar ?

2

(b) What is hyperchromic shift ? 2

(c) What is isozyme ? Cite one example. 2

(d) 'Starch respond negatively in Benedict's Test'—  
Explain. 2

(e) Why is phosphofructokinase considered as golden  
enzyme of glucose catabolism ? 2

(f) What are omega-3 and omega-6 fatty acids ? 2

(g) What is meant by the polarity of polypeptide and  
polynucleotide chain respectively ? 2

(h) What is Zwitterions ? 2

2. Answer any *four* questions : 4×5

(a) Briefly describe the pentose-phosphate pathway of  
carbohydrate metabolism. 5

(b) (i) Name one uncoupler of Electron Transport  
System.

(ii) State the role of oligomycin.

- (iii) Define a transamination.
- (iv) Name the irreversible steps of glycolytic pathway.  
1+1+1+2
- (c) (i) State the functions of sphingolipid and Eicosanoid.
- (ii) Write a short note on allosteric enzyme.  
(1+1)+3
- (d) (i) Describe the Urea cycle with proper diagram.
- (ii) What is ketogenic amino acid? 4+1
- (e) Provide an outline classification of amino acids based on R-group (side chain). 5
- (f) Write a note on  $\alpha$ -helix structure of proteins. 5

### **Group—C**

3. Answer any *one* question : 1×10

- (a) (i) How many ATP will be produced from the complete oxidation of a 16 carbon saturated fatty acid?

- (ii) Describe the basic steps of  $\beta$ -oxidation.
- (iii) Draw and describe the structure of a tRNA. 2+5+3
- (b) (i) 'Enzymes enhance reaction rates by lowering activation energy'— Explain this statement. 4
- (ii) What is Michaelis constant? 2
- (iii) Compare between A-, B- and Z DNA. 2
- (iv) What is meant by hypo- and hyperchromicity of DNA molecule? 2
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