17

Total No. of Printed Pages—7

**2 SEM TDC ZOO M 1 (N/O)**

**2019**

( May )

ZOOLOGY

( Major )

Course : 201

*Time* : 2 hours

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

( New Course )

**( BIOCHEMISTRY )**

*Full Marks* : 48
*Pass Marks* : 14

**1.** *(a)* Fill in the blanks : 1×5=5

*(i)* On hydrolysis, the high-energy phosphates release a large value of _____.

*(ii)* The vitamin that plays essential role in normal blood clotting is _____.

(iii) The non-protein part of an enzyme is known as _____.

(iv) Folding of the polypeptide chain is a characteristic of _____ level of protein organization.

(v) The category of enzymes that catalyze breakdown of substrates by involving water molecule is known as _____.

(b) Write short notes on the following (any *two*) : 4×2=8

(i) IUB Classification of Enzymes

(ii) Sources and functions of vitamin C

(iii) Coenzymes

**2.** State the second law of thermodynamics. Write with examples how it is applied in biological system. Mention the differences between entropy and free energy. 1+4+2=7

*Or*

What do you mean by buffer? How do buffers act in a solution? Write briefly about the biological buffers found in our body and mention their roles. 1+2+4=7



( Continued )



18

**3.** Why are amino acids called zwitterions? Classify the amino acids on the basis of their chemical nature. 1+6=7

*Or*

Define fatty acids. State the types of fatty acids. Write briefly about different types of compound lipids with examples. 1+2+4=7

**4.** Define metabolism. Write the various steps of glycolysis with enzymes and show the net gain of ATP in this process. 1+5+1=7

*Or*

Describe the electron transport system. Show how ATP is synthesized inside the mitochondria. 4+3=7

**5.** How do enzymes participate in biochemical reactions? Write briefly about the kinetics and mechanism of enzyme action. 2+5=7

*Or*

What is meant by enzyme inhibition? Discuss briefly about various types of enzyme inhibition. 1+6=7

( Turn Over )

6. Write briefly about structure and function of the various forms of RNA. Mention how RNA is different from DNA. 6+1=7

*Or*

What do you understand by genetic code? Discuss the mechanism of transcription in prokaryotic cell. 2+5=7



( Continued )