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2 SEM TDC ZOO M 1 (N/O)

2017

(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 up the blanks :

1×5=5

(i) The chemical form of energy of a system available for use in work is known as _____.

(ii) The lipids that contain carbohydrate groups are called _____.

(Turn Over)

(2)

(iii) Multiple forms of an enzyme that catalyzes the same reaction are called ____.

(iv) Retinol is an example of ____ soluble vitamin.

(v) Synthesis of lagging strand during replication of DNA is accomplished in short fragments known as ____.

(b) Differentiate between the following (any four) : $2 \times 4 = 8$

(i) Free energy and entropy

(ii) Saturated and unsaturated fatty acids

(iii) Glycolysis and Krebs cycle

(iv) Replication and transcription

(v) mRNA and rRNA

2. What is pH? Write briefly about the buffers and mention their role in biological systems.

Or

State the first and second laws of thermodynamics. Discuss their applications in biochemical systems.

$2 + 2 + 3 = 7$

(Continued)

(3)

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3. Why are amino acids called as amphoteric molecules? Give a brief classification of amino acids with examples. $1 + 6 = 7$

Or

What are polysaccharides? Write how they are classified with examples. $1 + 6 = 7$

4. What is oxidative phosphorylation? Where does it take place in a cell? Briefly discuss the process of oxidative phosphorylation. $1 + 1 + 5 = 7$

Or

Discuss the steps involved in glycolysis. What is the net number of ATP gained in glycolysis? $6 + 1 = 7$

5. What do you understand by enzyme inhibition? Discuss different types of enzyme inhibition. $1 + 6 = 7$

Or

Define coenzyme. What are fat soluble vitamins? Mention their functions. $1 + 1\frac{1}{2} + 4\frac{1}{2} = 7$

6. Why is replication of DNA called as semi-conservative? Write briefly about the mechanism of DNA replication. 2+5=7

Or

What is genetic code? Discuss the properties of genetic code. 1+6=7