

**D 51523**

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Name.....

Reg. No.....

**THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2013**

(UG-CCSS)

**Bio Chemistry – Complementary Course**

**BC 3C 09—ENZYMOLGY AND METABOLISM**

**Time Three Hours**

**Maximum 30 Weightage**

**I. Answer all the *twelve* questions :**

**1 Fructose 1 phosphate is split into glyceraldehyde and dihydroxy acetone phosphate by the enzyme.**

- |                    |                           |
|--------------------|---------------------------|
| (a) Enolase.       | (b) Aldolase.             |
| (c) Dihydroxylase. | (d) Phospho fructokinase. |

**2 Mitochondrial ATP synthesis requires :**

- (a) [H<sup>+</sup>] gradient.
- (b) A membrane potential.
- (c) An intact inner mitochondrial membrane.
- (d) All the three.

**3 Enzyme accelerate reaction by :**

- |                    |                    |
|--------------------|--------------------|
| (a) Increasing Ea. | (b) Decreasing Ea. |
| (c) Increasing OH. | (d) Increasing AG. |

**4 In the electron transport final acceptor of electron is :**

- |                   |                   |
|-------------------|-------------------|
| (a) Cytochrome b. | (b) Cytochrome a. |
| (c) Oxygen.       | (d) CoQ.          |

**5 The protein part of an enzyme is \_\_\_\_\_**

- |                 |                |
|-----------------|----------------|
| (a) Apoenzyme.  | (b) Coenzyme.  |
| (c) Holoenzyme. | (d) Isoenzyme. |

**6 ATP contains :**

- |                                |                                    |
|--------------------------------|------------------------------------|
| (a) Low energy phosphate bond. | (b) High energy phosphate bonds.   |
| (c) Phosphate bond.            | (d) Low barrier high energy bonds. |

**Turn over**

7 According to **IUB** enzymes are classified into how many classes ?

- (a) 5. (b) 6.  
(c) 7. (d) 8.

8 The site of dark reaction during photosynthesis is

- (a) Chloroplast. (b) Stroma.  
(c) Grana. (d) Thylakoids.

9 Insulin is formed in :

- (a) Adrenal Medulla. (b) Adrenal cortex.  
(c) Thyroid gland. (d) Pancreas.

10 The enzyme catalyzing breakdown without addition of water are called :

- (a) Lyases. (b) Hydratases.  
(c) Ligases. (d) Oxidoreductases.

11 The synthesis of glucose from lactate, glycerol, or amino acids is called :

- (a) Glycogenolysis. (b) Glycolysis.  
(c) Lipolysis. (d) Gluconeogenesis.

12 The components of electron transport chain are arranged in the following order or redox potential.

- (a) Increasing. (b) Decreasing.  
(c) Random. (d) Alternately increasing and decreasing.

(12 x  $\frac{1}{4}$  = 3 weightage)

II. Answer all *nine* questions :

13 What are Zymogens ?

14 What is the relationship between epinephrine and 3' – 5' cyclic AMP ?

15 Give an example for metal activated enzymes.

16 Define a coenzyme.

17 Describe the shape of the curve you will get on plotting substrate concentration against velocity of an enzyme reaction.

18 Explain activation energy.

19 Write an example for optical specificity of enzymes.

20 State the conditions in which insulin is released.

21 What is the action of pH on enzyme catalyzed enzymes.

(9 x 1 = 9 weightage)

**III. Answer any *five* questions :**

- 22 Explain competitive inhibition with an example. •
- 23 Write notes on non-cyclic photophosphorylation.
- 24 What is the importance of pentose phosphate pathway ?
- 25 Describe Glyoxalate cycle.
- 26 Write notes on allosteric enzymes.
- 27 Differentiate between substrate level oxidation and oxidative phosphorylation
- 28 Describe the importance of pentose phosphate pathway.

(5 x 2 = 10 weightage)

**IV. Answer any *two* questions :**

- 29 Describe absorption and digestion of carbohydrates.
- 30 Write an essay on cyclic and noncyclic photophosphorylation.
- 31 Describe glycogenesis and glycogenolysis.

(2 x 4 = 8 weightage)