P. S. SCIENCE & H. D. PATEL ARTS COLLEGE, KADI

Internal Examination

B. Sc. Semester - III **[Mark : 40**

5-10-2015] **Biotechnology : CC-BT-301** **[1-30 to 3-00**

Cellular Metabolism-I

Q.1. All questions are compulsory. Each question carries 1 mark 10

(1) The maximum number of substrate molecules that one enzyme molecule can act on in a given unit time is the

(A) Turnover number (B) Equilibrium constant

(C) Catalytic multiplier (D) Rate constant.

(2) The enzymes of TCA cycle are found in

(A) Mitochondria (B) Cytosol

(C) Golgi apparatus (D) Nucleus

(3) find the acidic enzyme.

(A) Trypsin (B) Pepsin

(C) chymotrypsin (D) none

(4) Which enzyme present in saliva juice.

(A) Renin (B) Pepsin

(C) Amylase (D) Phosphatase

(5) The theory of enzyme mechanism that suggests a flexible molecule whose shape is altered by the reaction conditions is the ____ model.

(A) lock-and-key (B) induced-fit

(C) substrate specific (D) active site

(6) A synthetase can be classified as a(an) _____ because its function is joining two molecules together.

(A) isomerase (B) oxidoreducatase

(C) hydrolase (D) ligase

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(7) The most important goal of glucose metabolism is
(A) Production of ATP as an energy source for all cells.
(B) production of acetyl-SCoA for synthesis of lipids.
(C) Synthesis of glycogen for later use.
(D) synthesis of oxidized coenzymes.

(8) When a cell's need for NADPH or ribose-6-phosphate its need for ATP, glucose-6, phosphate is metabolized by
(A) glycogenesis (B) glycolysis
(C) the pentose phosphate pathway (D) gluconeogenesis

(9) When energy is needed and adequate oxygen is available, pyruvate is converted to _____.
(A) glucose (B) ethanol (C) lactate (D) acetyle-SCoA

(10) In the first step of glycolysis, the conversion of glucose to glucose 6-phosphate is known as
(A) phosphorylation (B) isometization
(C) dehydration (D) reducation

Q.2. Answer the following. (Any Four) **20**

(1) Explain anerobic respiration of glucose.
(2) Write a note on Enzyme Classification.
(3) How enzymes work in cell ?
(4) What is themodynamics ? explain second law of thermodynamics with biological important ?
(5) Justify ATP is a Universal Currency of the living cell
(6) Write a note on Bioenergetics.

Q.3. Answer the following. (Any one) **10**

(1) Write a note TCA cycle with regulation
(2) Write a note on M.M. equation.
(3) Explain Aerobic oxidation of glucose.
