AAM-427

Seat No. _____

B. Sc. (Sem. III) Examination

October / November - 2016

Biotechnology : Paper - III

(Cellular Metabolism - I)

Time : Hours] [Total Marks : **70**

1 Attempt the entire question :

(a) MCQ : **10**

(1) Which law of thermodynamics does discuss about randomness ?

(a) First

(b) Second

(c) Third

(d) Zero

(2) In ideal electron transport system final electron acceptor must have _____ reduction potential.

(a) Highest

(b) Lowest

(c) Similar to all electron carriers

(d) None

(3) An enzyme is having EC number 1.4.2.1 then it must belong to class _____

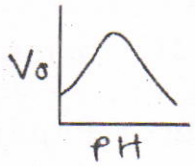
(a) Trasferase

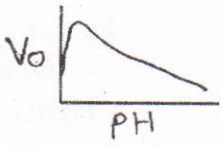
(b) Lyase

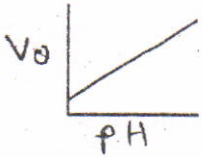
(c) Hydrolase

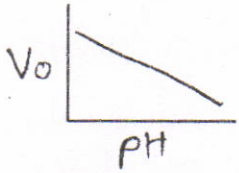
(d) Oxidorecutase

(4) Which of the following graph is of extracellular human saliva enzyme ?

(a) 

(b) 

(c) 

(d) 

(5) Which of the following is called universal energy currency ?
(a) rATP
(b) dATP
(c) Phospho Enol Pyruvate
(d) (a) and (b) both

(6) Which of the following is alosteric activator of hemoglobin ?
(a) Oxygen
(b) 2,6 Bis phosphoglycerate
(c) Hydrogen ions
(d) Carbon monoxide

(7) Which of the following may act as a precursor for gluconeogenesis?
(a) Pyruvate
(b) Lactate
(c) Ethenol
(d) (a) and (b) both

(8) What are the products of pentose phosphate pathway ?
(a) NADPH + H^+
(b) Pentose sugars
(c) NADP
(d) (a) and (b) both

(9) A competitive inhibitor can change
(a) V max
(b) Km
(c) Turn over number
(d) (a) and (b) both

(10) How many moles of ATP are produced by oxidative phosphorylation after aerobic respiration of 2 moles of glucose ?
(a) 4 (b) 8
(c) 34 (d) 68

(b) Do as directed : 5

(1) Define appoenzyme

(2) Wht is enthalpy ?

(3) What is locaiton of fermentation process in eukaryotic cell ?

(4) Give full form of HMP.

(5) Define allosteric modulator.

2 Write in detail : (write any **five**) 25

(1) Explain the anaerobic fermentation of latic acid.

(2) How does cell manage endergonic reactions ?

(3) An enzyme increases rate of biochemical reaction : justify this statement.

(4) Pentose phosphate pathway

(5) Double reciprocal plot

(6) Define internal energy and enthalpy, and give their thermodynamic significance.

(7) ATP as a universal energy currency.

3 Write a brief answer : (any **three**) **30**

(1) Explain oxygen independent phase of glucose catabolism in detail.

(2) Enzyme inhibition.

(3) TCA cycle.

(4) Regulation of enzyme activity.

(5) What is redox potential ? Discuss its biological applications.
