

Sum - 2023
23/5/23

Seat Number

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CJ-29

BP-203T
Biochemistry
(712203)

Total Pages : 7]

Max. Marks : 75

Time : 3 Hours

- Note : (1) Do not write anything on question paper except Seat No.
(2) Graph or diagram should be drawn with the black ink pen being used for writing paper or black HB pencil.
(3) Students should note, no supplement will be provided.
(4) Figures to the right indicate full marks.
(5) All questions are compulsory.

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1. Multiple Choice Questions (MCQs) :

- (i) The reaction which have negative free energy change is called as
(a) Endergonic
(b) Enthalpy
(c) Exergonic
(d) Entropy
- (ii) Globulins are :
(a) Insoluble in water
(b) Coagulated by heat
(c) Precipitated by half saturation salt
(d) All of the above

P.T.O.

(iii) Which one of the following is non-reducing sugar ?

- (a) Glucose
- (b) Sucrose
- (c) Maltose
- (d) Fructose

(iv) The following are hydroxyl group containing amino acid *except* :

- (a) Threonine
- (b) Serine
- (c) Tyrosine
- (d) Histidine

(v) Chemical formula of palmitic acid is :

- (a) $\text{CH}_3(\text{CH}_2)_{14}\text{COOH}$
- (b) $\text{CH}_3(\text{CH}_2)_{16}\text{COOH}$
- (c) $\text{CH}_3(\text{CH}_2)_{12}\text{COOH}$
- (d) None of the above

(vi) Vitamin D_3 is also known as :

- (a) Ergocalciferol
- (b) Cholesterol
- (c) Cholecalciferol
- (d) Secosterol

(vii) Which of the following is an essential amino acid ?

- (a) Leucine
- (b) Alanine
- (c) Glutamine
- (d) Tyrosine

(viii) Enzymes which are formed at constant rate and in constant amount
✓ regardless of metabolic state of cell are called as :

- (a) Exozymes
- (b) Constitutive enzymes
- (c) Endozymes
- (d) Inducible enzymes.

(ix) In most of the naturally occurring mono-unsaturated fatty acids, the double bond will be placed between :

- ✓
- (a) C_6-C_7
 - (b) C_7-C_8
 - (c) C_8-C_9
 - (d) C_9-C_{10}

(x) The triterpenoid which act as the precursor of almost all plant sterols :

- ✓
- (a) Lanosterol
 - (b) Cholesterol
 - (c) Cycloartenol
 - (d) Isoprenoids

(xi) Ketone bodies are synthesized in

- (a) Liver
- (b) Kidney
- (c) Heart
- (d) Brain

(xii) A nucleoside is composed of :

- (a) Nucleobase + Sugar
- (b) Nucleobase + Sugar + Phosphate
- (c) Nucleobase + phosphate
- (d) None of the above

(xiii) Which of the following is a common compounds shared by the TCA Cycle and Urea Cycle ?

- (a) α -ketoglutarate
- (b) Succinyl CoA
- (c) Oxaloacetate
- (d) Fumarate

(xiv) The length of one turn of DNA is :

- (a) 3.4\AA
- (b) 20\AA
- (c) 34\AA
- (d) 2.0\AA

(xv) Specific gravity of lipid is :

(a) 0.2

(b) 0.8

(c) 1.0

(d) 1.5

(xvi) When the velocity of enzyme activity is plotted against substrate concentration, which of the following is obtained ?

✓

(a) Hyperbolic curve

(b) Parabola

(c) Straight line with positive slope

(d) Straight line with negative slope

(xvii) How many ATP molecules can be derived from each molecule of Acetyl CoA that enters Kreb's cycle :

(a) 6

(b) 18

(c) 38

(d) 12

(xviii) The degree of unsaturation of lipid can be measured as.....

(a) Saponification number

(b) Iodine number

(c) Polenske number

(d) Reichert Meissil number

(xix) Which of the following is a co-enzyme in the reaction catalysed by
✓ glyceraldehyde-3-Phosphate dehydrogenase ?

(a) ATP

(b) Cu^{++}

(c) NAD^+

(d) Heme

(xx) A student developed hemolytic anemia after taking the oxidizing
✓ antimalarial drug, this severe reaction is most likely due to :

(a) Concomitant scurvy

(b) Glucose-6-phosphate dehydrogenase deficiency

(c) Diabetes

(d) Glycogen phosphorylase deficiency.

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2. Solve any two :

✓ (a) Explain β -oxidation pathway.

(b) Write notes on :

(i) Enzyme kinetics

(ii) Enzyme inhibitors.

✓ (c) Explain in detail citric acid cycle.

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3. Solve any seven :

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- ✓ (a) Explain electron transport chain.
- ✓ (b) Draw and explain urea cycle.
- (c) Write a short note on structure of DNA.
- (d) Give therapeutic and diagnostic application of enzymes. ✓
- (e) Write a note on energy rich compounds.
- (f) Draw glycolysis pathway and give its significance.
- ✓ (g) Write a note on metabolic disorders of Phenylalanine and Tyrosine. ✓
- ✓ (h) Write a note on conversion of cholesterol into vitamin-D.
- (i) Give transamination and deamination reaction of amino acid metabolism.

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