VCD 3/10/19 S4BSC Sem IV Biochemistry (ATKT) Choice Based.

Q.P. Code: Set 1

2 ½ Hours

Total Marks: 75

1. Attempt **all** questions.
2. **All questions** carry **equal** marks.
3. Draw **neat labeled diagrams** wherever necessary.
4. Use of **log tables** and **non-programmable calculator** is **allowed**.
5. For **Q 2, Q 3 and Q 4** attempt A and B **OR** C and D.

Q 1 **Do as directed (Any fifteen)** 15

1. Precursor amino acid for biosynthesis of GABA is _____.
2. Synthesis of glucose from non-carbohydrate precursors is accomplished by a pathway called _____
3. The number of NADPH produced when one molecule of Glucose 6-phosphate completes oxidative phase of HMP shunt is _____
4. Give one example of glucogenic amino acid.
5. State the location of enzymes of Krebs cycle in eukaryotic cells **mitochondria**
6. Name one co-factor of pyruvate dehydrogenase complex.
7. Name one metabolic disorder associated with urea cycle.
8. State true/false: Deamination of tyrosine releases carbon dioxide.
9. Name one enzyme involved in non-oxidative deamination.

Write the equation for the reaction catalysed by following enzymes:-

10. Pyruvate kinase
11. Fumarase

Name the enzyme that catalyses the conversion of following reactions:-

12. Ornithine to citrulline
13. Pyruvate to acetyl CoA

14. The reactions of ketone body formation occur in the matrix of _____

a. kidney mitochondria b. liver mitochondria

15. _____ are lipid-binding proteins in the blood which transports triacylglycerols, phospholipids, cholesterol, and cholesteryl esters between organs.

a. Apolipoproteins b. Lipases

c. Carboxylases d. Chylomicrons

16. The fatty acyl group is enzymatically transferred from Carnitine to intra-mitochondrial Coenzyme A by _____.

a. Carnitine Acyltransferase II, b. Lipase,

b. Carboxylase, d. Carnitine Acyltransferase I

17. Propionyl-CoA is first carboxylated to form the D stereoisomer of methyl malonyl-CoA by .....

a. Propionyl-CoA Carboxylase, b. Methylmalonyl-CoA Epimerase,

c. Methylmalonyi-CoA Mutase, d. Thiolase

18. Branched fatty acids are catabolized in peroxisomes of animal cells by

a. ω oxidation b. α oxidation

c. β oxidation d. μ oxidation

19. _____of permits hormone sensitive lipase access to the surface of the lipid droplet.

a. Phosphorylation b. Acylation c. Hydrolysis d. Reduction

20. The overall equation of Palmitoyl-CoA beta oxidation is:

Palmitoyl-CoA + _____ + 7FAD + 7NAD$^+$ + $7H_2O$ → 8 Acetyl-CoA + $7FADH_2$ + 7NADH + $7H^+$

a. 7 CoA b. 7 Acetyl-CoA

c. 8 CoA d. 8 Acetyl-CoA

Q. 2 A	Describe Glycolysis.	08
Q. 2 B	Write a note on Oxidative phase of Pentose Phosphate Pathway.	07
	OR	
Q. 2 C	Explain Citric acid cycle.	08
Q. 2 D	Give an account on Electron transport chain.	07
Q. 3 A	Justify: Amino acids are degraded to metabolites that integrate into Krebs cycle.	08
Q. 3 B	Discuss biosynthesis of Histamine and GABA.	07
	OR	
Q. 3 C	Explain Urea Cycle.	08
Q. 3 D	Describe biosynthesis of Glutathione. Give its significance.	07
Q. 4 A	Explain the catabolism process of Adenosine.	08
Q. 4 B	Explain the process of Ketone bodies formation.	07
	OR	
Q. 4 C	Describe basic four steps of Beta Oxidation of Saturated Fatty Acids in mitochondria.	08
Q. 4 D	Explain degradation of Thymine nucleotide.	07
Q. 5	Write Short notes on **any three** of the following	15
a.	ATP as an energy rich compound.	
b.	Biosynthesis of Serotonin.	
c.	Fates of pyruvate formed by Glycolysis.	
d.	ω- oxidation of fatty acid.	
e.	Mobilization of triacylglycerols stored in adipose tissue.	