

## SARDAR PATEL UNIVERSITY

M. Sc. (Integrated) Biotechnology – Second Semester Examination

Wednesday, 11<sup>th</sup> April, 2018

10:00 A.M. to 01:00 P.M.

PS02CIGB23: Biochemistry

Note: 1) Figures to the right indicate marks

2) Draw diagram wherever necessary

Total marks: 70

Q – 1 Choose the most appropriate alternative for the following:

(08)

1. \_\_\_\_\_ ATP are invested in glycolysis.
 

a) 2	b) 4
c) 6	d) 8
  
2. In the presence of ribulose 5-phosphste epimerase, ribulose 5- phosphate is converted into \_\_\_\_\_.
 

a) Xylulose 5-phosphate	b) Ribose 5-phosphate
c) Erythrose 4-phosphate	d) 6-phosphogluconate
  
3. \_\_\_\_\_ are the final products in  $\beta$  oxidation of odd chain fatty acids.
 

a) Acetyl CoA, Malonyl CoA	b) 2 Acetyl CoA
c) Acetyl CoA, propionyl CoA	d) Acetyl CoA, Succinyl CoA
  
4. In most of the naturally occurring mono-unsaturated fatty acids, the double bonds will be placed between \_\_\_\_\_.
 

a) C6-C7	b) C7-C8
c) C8-C9	d) C9-C10
  
5. Urea cycle converts
 

a) Keto acids into amino acids	b) Amino acids into keto acids
c) Ammonia into less toxic form	d) Ammonia into more toxic form
  
6. \_\_\_\_\_ amino acid is glycogenic.
 

a) Leucine	b) Lysine
c) Glycine	d) Pyruvate
  
7. \_\_\_\_\_ provides 7<sup>th</sup> position carbon of purine ring.
 

a) Aspartate	b) Glycine
c) Formate	d) CO <sub>2</sub>
  
8. \_\_\_\_\_ inhibits aspartate transcarbamoylase (ATCase).
 

a) CTP	b) ATP
c) GTP	d) None of these

[P.T.O.]

- Q – 2 Attempt ANY SEVEN from the following: (14)
1. Write three irreversible reactions of glycolysis along with enzymes.
  2. Why glycogen is preferred as a reserve fuel instead of fat?
  3. Enlist enzymes involved in TCA cycle.
  4. Give the function and importance of carnitine acyltransferase.
  5. Narrate functions of acyl CoA synthetase.
  6. What is essential amino acid? Give its examples.
  7. Distinguish between CPS I & CPS II.
  8. How biosynthesis of purine is regulated?
  9. Give schematic representation of dTMP synthesis from UDP.
- Q – 3 (a) Explain the regulation of glycolysis. (06)  
 (b) Describe the mechanism of glucose synthesis from pyruvate. (06)  
 OR  
 (b) Depict on glycogenesis. (06)
- Q – 4 (a) Discuss  $\beta$  oxidation of palmitoyl CoA in detail. (06)  
 (b) Write a note on ketogenesis. (06)  
 OR  
 (b) Describe biosynthesis of phospholipids. Give its importance. (06)
- Q – 5 (a) Explain the synthesis of urea. (06)  
 (b) What are transamination reactions? Explain the role of pyridoxal phosphate in the same. (06)  
 OR  
 (b) Discuss biosynthesis of any one non essential amino acid. (06)
- Q – 6 (a) Explain the synthesis of Inosine monophosphate. (06)  
 (b) Describe the pathway for synthesis of pyrimidines. (06)  
 OR  
 (b) Write a short note on degradation of purine to uric acid. (06)

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