G-2/202/21

Roll No. .....

M.Sc. II Semester Examination, 2021

BIOCHEMISTRY

Paper II

(Bioenergetics and Metabolism)

Time : 3 Hours] [Max. Marks : 80

Note : *All questions are compulsory. Question Paper comprises of 3 sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.*

SECTION A **1×8=8**

(Objective Type Questions)

Choose the correct answer :

1. Unfolding of regular secondary protein structure causes :

(a) Large decrease in the entropy of protein.

(b) Little increase in the entropy of protein.

(c) No change in the entropy of protein.

(d) Large increase in the entropy of protein.

2. For a reaction if ΔG° is positive then :

(a) The product will be favoured.

(b) The reaction will be favoured.

(c) The concentration of reactant and product will be equal.

P.T.O.

(d) All of the reactant will be converted to product.

3. Glycogen phosphorylases is dimer of :

(a) 842 residue. (b) 800 residue.

(c) 600 residue. (d) 749 residue.

4. Which enzyme catalysis the reaction of glycogenolysis ?

(a) Phosphoglucomutase.

(b) Glycogen phosporylase.

(c) Glucose 6-phosphate.

(d) All of the above.

5. How many ATP molecules can be derived from each molecules of acetyl CoA that enter the Kreb's cycle ?

(a) 12 (b) 6

(c) 33 (d) 18

6. In which form the lipids are transported into the blood ?

(a) Chyme (b) Apolipoprotein

(c) Micelles (d) Chylomicrons

7. The atoms of pyrimidin rings are derived from :

(a) Glutamine

(b) Carbamoylphosphate and aspartate

(c) Glutamine and N10 formyl tetrahydrofolate

(d) None of above

8. In purin nucleotide glycosidic bond are formed between which carbon of deoxyribose and purine :

(a) 1 and 9 (b) 6 and 9

(c) 1 and 1 (d) 1 and 6

SECTION B **4×6=24**

(Short Answer Type Questions)

Note : *Attempt one question from each unit.*

Unit-I

1. Explain the laws of thermodynamics.

Or

Explain the high energy biological compounds.

Unit-II

2. Explain the regulation of glycolysis pathways and calculate the energetics.

Or

Explain the glyocylate pathways.

Unit-III

3. Explain the fatty acid activation in brief.

Or

Give β-oxidation of linolein acid.

Unit-IV

4. Write regulation of denovo pathway of pyrimidin biosynthesis.

Or

Which amino acid is degradate and give taurocholate ? Explain.

SECTION C **12×4=48**

(Long Answer Type Questions)

Note : *Attempt one question from each unit.*

Unit-I

1. Write an account of ATP hydrolysis.

Or

Explain concept of free energy change.

Unit-II

2. Explain Gluconeogenesis and its importance.

Or

In which pathway the glucose is converted to glycogen, explain and give any 6 related inborn errors.

Unit-III

3. Explain the biological role and biosynthesis of ceremide, Sulphatidase and Ethenolamine plasmalogen.

Or

Explain the biosynthesis and biological role of lanosterol.

Unit-IV

4. Explain the biosynthesis and biological role of lysine.

Or

Explain the biosynthesis of guanosin tri-phosphate from 5-phosphoribosylamine.

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