CS/B.PHARM/SEM-4/PT-404/2013

2013

PHARMACEUTICAL CHEMISTRY (Bio-Chemistry)

Time Allotted : 3 Hours Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : 10x1 = 10

i) Which one is a high energy compound ?

a) ATP b) Vitamin

c) Mineral d) all of these.

ii) Co-enzyme *Q* is a lipophilic

a) Proton carrier b) Anion carrier

c) Cation carrier d) Electron carrier.

iii) If glycerol phosphate shuttle operates, the total number of ATP synthesized per mole of glucose oxidation is

a) 38 b) 36

c) 34 d) 32.

iv) Which one of the following enzymes is used in energy investment phase of glycolysis ?

a) Phosphoglycerate kinase

b) Enolase

c) Phosphofructokinase

d) Pyruvate kinase.

v) Which of the following generates prostanoids ?

a) Cyclo-oxigenase

b) Lipoxigenase

c) Sphingo lipid

d) None of these.

vi) The cofactor used for Vitamin B_6 is

a) Thiamine diphosphate

b) NAD^+

c) Pyridoxal phosphate

d) Menaquinone.

vii) Activation of fatty acid occurs in the

a) Cytosol b) Mitochondria

c) Stomach d) Membrane.

viii) Cytochrome *C* oxidase is inhibited by

a) Succinate b) Pyruvate

c) Malate d) Cyanide.

ix) Which of the following is not a sulphur containing Amino acid ?

a) Cysteine b) Cystine

c) Methionine d) Serine.

x) In gluconeogenesis process, which is the major substrate ?

a) Amino acid b) Glycogen

c) Sucrose d) Maltose.

xi) Which of the following is not an essential fatty acid ?

a) Linolenic acid b) Linoleic acid

c) Arachidonic acid d) Oleic acid.

xii) In liver disease, level of SGOT

a) increases b) decreases

c) no change d) none of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3x5 = 15

2. Define schematically Gluconeogenesis and explain its significance. Where does it take place ? 3 + 1 + 1

3. What are Carbtree effect and Pasteur effect ?

4. Define and give examples of the following : 2 + 3

a) Antiport system

b) Endocytosis.

5. Describe the classification and naming of enzymes.

6. Write a note on Ketogenesis.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3x15 = 45

7. How do you determine the primary structure of protein ? Write about the -plated sheet of secondary structure. Write the factors affecting protein stability. What are the bonds present in 3D structure of protein ? What are allosteric proteins ? How is a peptide bond formed in primary structure of protein ? 3 + 3 + 3 + 2 + 2 + 2

8. Explain Beta-oxidation process of palmitic acid and energetics associated with it. What is the structure of cholesterol ? 9 + 4 + 2

9. Derive Michaelis-Menten equation for ES complex formation. What is Lineweaver-Burk plot ? Define its significance. Define K_m. 7 + 4 + 3 + 1

10. a) How does the amino acid sequence affect the stability of an -helix ?

b) Write a note on ATP production and its significance.

c) Discuss the role of vitamins and metals as cofactors.

5 + 5 + 5

11. Write a detailed note on oxidative phosphorylation in reference with its different mechanisms and processes. Write short note on inhibitors involved in different processes of oxidative phosphorylation. 9 + 6

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