

B.SC. BIOCHEMISTRY
Second Semester
Biochemistry-II
(BBC - 08)

Duration: 3Hrs.

Full Marks: 70

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

1. Illustrate the following :(Any five)

5×2=10

- a) Fermentation
- b) Chorismate
- c) Reaction centre
- d) ATPase
- e) Essential amino acids
- f) Structure of Mitochondria
- g) Hill reaction

2. Write on the synthesis mechanism of: (Any five)

3×5=15

- a) Pyruvate
- b) Palmitate
- c) D-Ribose 5- phosphate in PPP
- d) AMP
- e) Tyrosine
- f) Methionine

PTO.....

3. Answer the following in brief: (Any five)

5×5=25

- a) Differentiate between glycolysis and gluconeogenesis.
- b) Calculate the number of net ATP produced in TCA cycle.
- c) Explain the mechanism of β - oxidation of palmitate.
- d) Give the chemical structures of Acetyl CoA and Inisinate.
- e) Explain the regulation mechanism pentose phosphate pathway.
- f) What is electron transport chain? Explain the hypothesis of ATP synthesis oy oxidative phosphorylation.
- g) What do you mean by Z scheme of photosynthesis.

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(The figures in the margin indicate full marks for the questions)

Duration: 20 minutes

Marks – 20

PART A- Objective Type

Choose the correct option for the following questions:

1×20=20

- Glycolysis has steps:
a) 12 b) 10 c) 13 d) 15
- The alternative pathway of glycolysis is:
a) Pentose phosphate pathway b) TCA cycle c) Glycogenesis d) Gluconeogenesis
- Conversion of non-carbohydrate into carbohydrate is:
a) Pentose phosphate pathway b) TCA cycle c) Glycogenesis d) Gluconeogenesis
- Net ATP produced in glycolysis is:
a) 4 b) 5 c) 2 d) 1
- C, U, T are:
a) Purine b) Purine rings c) Pyrimidine d) Nucleotides
- De novo and Salvage pathway are the synthesis mechanisms of:
a) Purine b) Purine rings c) Pyrimidine rings d) Nucleotides
- The acidic amino acids are:
a) His and Gly b) Leu and Val c) Tyr and Try d) Asp and Glu
- The step between glycolysis and TCA cycle is:
a) Carboxylation b) Methylation c) Acylation d) Decarboxylation
- Ammonia is the end nitrogenous waste of:
a) Aquatic animals b) Terrestrial animals c) Aerial animals d) Human beings

10. Carbon assimilation reaction is also known as:
- a) Dark reaction
 - b) Light reaction
 - c) Respiration
 - d) Oxidation reaction
11. Photosystem I has maximum wavelength at (in nm):
- a) 660
 - b) 680
 - c) 700
 - d) 720
12. β - oxidation of fatty acids occur in:
- a) Cytoplasm
 - b) Mitochondria
 - c) SER
 - d) RER
13. Fatty acid synthesis occurs in:
- a) Cytoplasm
 - b) Mitochondria
 - c) SER
 - d) RER
14. Ornithine is an intermediate product of:
- a) Cori cycle
 - b) Krebs cycle
 - c) Urea cycle
 - d) All of the above
15. NADH produced in citric acid cycle is:
- a) 3
 - b) 4
 - c) 5
 - d) 6
16. Chorismate is a key intermediate of:
- a) Try, Tyr and Phe
 - b) Asp, Glu and Gly
 - c) Val, His and Phe
 - d) All of the above
17. Kinase is required for:
- a) Addition of ATP
 - b) Removal of ATP
 - c) Synthesis of ATP
 - d) Degradation of ATP
18. The first enzyme involved in glycolysis is:
- a) Hexokinase
 - b) Aldose
 - c) Enolase
 - d) Pyruvate kinase
19. Fermentation is degradation of glucose under:
- a) Anaerobic condition
 - b) Aerobic condition
 - c) Oxygenic condition
 - d) Methanogenic condition
20. The monomer of nucleic acid is:
- a) Purine
 - b) Nucleotide
 - c) Nucleoside
 - d) Pyrimidine
