

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(Fifth Semester)

Branch – BIOCHEMISTRY

INTERMEDIARY METABOLISM

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 x 1 = 10)

- In oxidative phosphorylation, one molecule of reduced flavoprotein produces how many ATPs:
 - Zero
 - 2
 - 3
 - 4
- The oxidation and phosphorylation in intact mitochondria is blocked by:
 - Puromycin
 - Streptomycin
 - Gentamicin
 - Oligomycin
- Which of the following hormones is not involved in carbohydrate metabolism?
 - Cortisol
 - ACTH
 - Glucagon
 - Vasopressin
- A regulator of the *enzyme glycogen synthase* is:
 - Citric acid
 - Glucose-6-PO₄
 - Pyruvate
 - GTP
- During each cycle of β -oxidation of FA, all the following compounds are generated, except:
 - NADH
 - H₂O
 - FAD.H₂
 - Acyl-CoA
- The major source of cholesterol in arterial smooth muscle cells is from:
 - IDL
 - LDL
 - HDL
 - Chylomicrons
- Tryptophan is best described by which of the following statement?
 - It is a precursor of the pineal hormone melatonin
 - Is a precursor for melanin
 - It produces thyroid hormones
 - It produces catecholamines
- Reactions of urea cycle take place in liver cells
 - In cytosol
 - Only in lysosomes
 - In mitochondrial matrix
 - Both cytosol and mitochondrial matrix.
- m-RNA is a complementary copy of:
 - A single strand of DNA
 - 3' – 5'-strand of DNA
 - Antisense strand of DNA
 - t-RNA
- The type of RNA that characteristically contain methylated purine and pyrimidines is
 - m-RNA
 - hn-RNA
 - t-RNA
 - r-RNA

Cont...

SECTION - B (35 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 7 = 35)

11 a Enlist the role of Inhibitor in ETC.

OR

b State the mitochondrial shuttle system.

12 a Explain in detail of Glycolysis and its important.

OR

b Summarize the Glycogenesis pathway.

13 a Explain the β - oxidation of fatty acids.

OR

b Detail note on the formation of bile acids.

14 a Outline the catabolism of Glycine.

OR

b Sketch the reaction of Transamination with examples.

15 a How are purine nucleotide synthesized.

OR

b Enlist the any five Inhibitors of pyrimidine biosynthesis.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks

(3 x 10 = 30)

16 Discuss the mechanism of Oxidative phosphorylation.

17 Explain in detail the Tricarboxylic Acid Cycle.

18 Describe the biosynthesis of phospholipids.

19 Illustrate the reactions of Urea cycle.

20 Elucidate the biosynthesis of pyrimidine bases.

Z-Z-Z

END