

B.Sc. Semester - 5 (CBCS) Examination
December - 2020 (Old Course)
INTERMEDIARY METABOLISM(CORE)

Time: 1:30 Hours**Marks: 42****Instructions:**

1. Figures to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any three of the following questions.

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- Q.1(A) Answer any one of the following questions in detail..... (07)
1. Write comparison between Glycogenolysis and Glycogenesis.
 2. Discuss different reactions of Glycolysis in detail.
- Q.1(B) Write the answer for any one of the following questions..... (04)
1. Explain how Gluconeogenesis is different from Glycolysis.
 2. Write the reaction and physiological significance of HMP pathway.
- Q.1(C) Answer any three of the following questions in just one or two lines..... (03)
1. How does galactose enter glycolytic pathway?
 2. Name the cofactors required by pyruvate dehydrogenase complex.
 3. Describe lactose intolerance.
 4. Why catabolic and anabolic processes occur in different compartments of a cell?
 5. Write differences between glucokinase and hexokinase.
- Q.2(A) Answer any one of the following questions in detail..... (07)
1. Write the role of Cytochrome-C in the process of mitochondrial electron transport.
 2. Discuss the working of mitochondrial ATP synthase.
- Q.2(B) Answer any one of the following questions in detail..... (04)
1. Name the two shuttle systems that transport cytosolic NADH to mitochondrial matrix. Discuss any one of the two in detail.
 2. Draw a neat diagram showing different components of mitochondrial electron transport chain.
- Q.2(C) Answer any three of the following questions in just one or two lines..... (03)
1. Define ADP/O ratio and write its significance.
 2. Name the inhibitors of complex-IV of mitochondrial ETC.
 3. Write the role of iron sulphur proteins in mitochondria?
 4. Define uncouplers using suitable examples.
 5. What is the role of ubiquinone in mitochondrial electron transport?
- Q.3(A) Answer any one of the following questions in detail..... (07)
1. Calculate the net ATP yield of complete oxidation of 18 carbon saturated fatty acid.
 2. Write a detailed note on the process of beta oxidation of fatty acids.
- Q.3(B) Answer any one of the following questions in detail..... (04)
1. Write a short note on ketone body metabolism.
 2. What are phospholipids? Write functions and biosynthesis process of phospholipids.
- Q.3(C) Answer any three of the following questions in just one or two lines..... (03)
1. Write the role of carnitine in lipid metabolism.
 2. Name the products that are formed by action of phospholipase-C on phosphatidylcholine.
 3. Write the examples of poly-unsaturated fatty acids (PUFA).
 4. Why LDL is called bad cholesterol.
 5. Write the regulatory role and inhibitors for HMG CoA reductase in cholesterol synthesis.

- Q.4(A) Answer any one of the following questions in detail..... (07)
1. Discuss different reaction of urea cycle.
 2. Discuss amino acid transamination reactions using examples of SGOT and SGPT.
- Q.4(B) Answer any one of the following questions in detail..... (04)
1. Define essential amino acid and write their examples.
 2. Write the examples and functions of biological amines. Name the enzymes that convert amino acids unto amines.
- Q.4(C) Answer any three of the following questions in just one or two lines..... (03)
1. Define glycogenic amino acids and write their examples.
 2. Name the co-enzyme required in amino group transfer reactions of amino acids.
 3. Genetic defect in which enzyme cause phenylketoneuria (PKU)?
 4. What do you mean by ammonotelic organisms? Write examples.
 5. Name the hormone that is synthesized from tyrosine amino acid.
- Q.5(A) Answer any one of the following questions in detail..... (07)
1. Discuss salvage pathway of synthesis of purine nucleotides.
 2. Differentiate between nucleosides and nucleotides.
- Q.5(B) Answer any one of the following questions in detail..... (04)
1. Write a short on biochemical basis and symptoms of Gout.
 2. Discuss de-novo or salvage pathway for synthesis of pyrimidine nucleotides.
- Q.5 (C) Answer any three of the following questions in just one or two lines..... (03)
1. Which enzyme is involved in conversion of ribonucleotides to deoxyribonucleotides?
 2. Name different types of RNAs.
 3. Write therapeutic applications of nucleotide analogues.
 4. What disease is caused by genetic deficiency of adenosine deaminase?
 5. Name the purine and pyrimidine nucleotides present in DNA.
