



BCG-003-1015030 Seat No. \_\_\_\_\_

**B. Sc. (Biochemistry) (Sem. V) (CBCS) Examination**

August – 2021

**Intermediary Metabolism : Paper - 502**

**Faculty Code : 003**

**Subject Code : 1015030**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

**Instructions:**

[14 X5 = 70]

i) Answer any five of the following questions.

ii) All questions carry equal marks

- 1 Explain the process of glycolysis in detail and discuss the regulatory role of phosphofructokinase in control of glycolysis.
- 2 Write a detailed note on biochemical pathways involved in synthesis and breakdown of glycogen.
- 3 Describe glycogenic and ketogenic amino acids with suitable examples and show the entry points of different amino acids into the TCA cycle using a neat diagram.
- 4 Discuss the transamination reaction in amino acid metabolism using suitable examples and write the physiological importance and diagnostic significance of SGOT and SGPT.
- 5 Write a short note on following steps of fatty acid oxidation: Activation, transport and beta oxidation. Calculate ATP yield of complete oxidation of Palmitic acid.
6. Discuss steps involved in process of fatty acid synthesis in mammals and write importance of fatty acid synthase as a multi enzyme complex.
- 7 Draw a labeled diagram showing arrangement of different components of mitochondrial ETC. Briefly discuss biochemical roles of complex I, II, III and IV of mitochondrial electron transport chain and list their inhibitors.
- 8 Explain mitochondrial ATP synthase ( $F_0F_1$  - ATPase) as molecular motor. Discuss its subunit composition and structure using a neat diagram.
- 9 Write in detail the salvage or de novo pathway for synthesis of purine nucleotides.
- 10 Explain the differences between nucleosides and nucleotides. Explain how ribonucleotides are converted into deoxyribonucleotides.