Reg. No. | | | | | | | | | |

BCS 455

II Semester M.Sc. Degree Examination, September/October 2022
BIOCHEMISTRY
Metabolism of Fuel Molecules

Time : 3 Hours Max. Marks : 70

***Note** : Answer Part – **A** and **any five** from Part – **B**.*

PART – A

1. Answer **any ten** of the following : **(10×2=20)**

   a) What are uncouplers ? Give an example.

   b) Mention the fate of acetyl CoA.

   c) Mention the major pathways of glucose utilization.

   d) Write the substrates for gluconeogenesis.

   e) Write the significance of Cori cycle.

   f) State the role of HDL and LDL.

   g) Define proton motive force.

   h) Define P/O ratio.

   i) State the significance of malate-asparatate shuttle.

   j) Mention the importance of cholesterol.

   k) What is cholelithiasis ? Mention its causes.

   l) Define Q cycle.

PART – B **(5×10=50)**

2. a) Describe briefly the regulation of glycolysis.
   b) Explain the HMP shunt pathway and mention its physiological role. **(5+5=10)**

3. a) Give a brief account on metabolism of carbohydrates.
   b) Describe the structure and function of ATP synthase complex. **(5+5=10)**

P.T.O.

4. a) How is glucose synthesized from glycerol ? Explain.
   b) Discuss the metabolism of triacylglycerols in animals. **(5+5=10)**

5. a) Explain Knoop's experiment on lipid degradation.
   b) Discuss the β -oxidation of odd numbered saturated fatty acid. **(5+5=10)**

6. a) Describe the metabolism of circulating lipids.
   b) Explain the glyoxylate pathway and its regulation. **(5+5=10)**

7. a) Explain the organization of respiratory chain complexes.
   b) Discuss the inhibitors of electron transport chain. **(5+5=10)**

8. a) Explain Mitchell's hypothesis.
   b) Write a note on Tay sach's and Nieman-Pick diseases. **(5+5=10)**
