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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-aspartate 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)**
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