

2021

PHYSIOLOGY — HONOURS

Paper : CC-8

(Digestion and Metabolism)

Full Marks : 50

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Group - A

1. Answer **any five** questions : 2×5
- (a) What is deglutition reflex?
 - (b) What is Zollinger-Ellison syndrome?
 - (c) What do you mean by ATP synthasome?
 - (d) Explain, why skeletal muscle cannot add Glucose to blood.
 - (e) Name blockers (one each) of Aconitase and alpha ketoglutarate dehydrogenase.
 - (f) State the chemical name and the function of carnitine.
 - (g) State the types of carbamoyl phosphate synthetase involved in synthesis of urea and pyrimidine and mention their sub-cellular locations.
 - (h) How is 'active-methionine' formed?

Group - B

2. Write short notes on **any two** : 5×2
- (a) Enterohepatic circulation
 - (b) Purine salvage pathway
 - (c) Anaplerotic reactions
 - (d) Structural Organisation of mammalian Fatty Acid Synthase Complex.

Group - C

Answer **any three** questions.

3. Describe the process of digestion and absorption of fats. 10

Please Turn Over

4. (a) Describe the chemiosmotic theory of ATP synthesis.
(b) Name the complexes which are proton pumps.
(c) Name one physiological uncoupler. 6+3+1
5. (a) Mention the difference in the functions of hexokinase and glucokinase.
(b) Discuss the step where substrate-level phosphorylation takes place in citric acid cycle.
(c) State the steps of pentose phosphate pathway catalyzed by 'transketolase' enzyme.
(d) What is glycogenin? 2+2+5+1
6. (a) What are isoprenoid units?
(b) Describe the process of synthesis of the first isoprenoid unit during cholesterol biosynthesis from acetyl CoA.
(c) Mention the rate limiting steps of cholesterol biosynthesis and its inhibitor. 2+6+2
7. (a) Describe the catabolism of pyrimidine.
(b) Describe the reaction catalyzed by L-glutamate dehydrogenase and mention its significance. 6+4
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