

PHYSIOLOGY

[HONOURS]

Course Code : PHYSIOL(H)CC-T-8

Full Marks : 40

Time : 2½ Hours

The figures in the right-hand margin indicate marks.

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

1. Answer any **five** questions : $2 \times 5 = 10$
- a) What is redox potential?
 - b) What is non-oxidative deamination?
 - c) Distinguish between oxidative phosphorylation and substrate-level phosphorylation?
 - d) State the significance of glucose-alanine cycle?
 - e) What is transmethylation?
 - f) What do you mean by biological value of proteins?
 - g) Name the vitamins which have antioxidant activity.
 - h) What is meant by free radicals? Give one example.

2. Answer any **two** questions: $5 \times 2 = 10$
- a) Discuss briefly the chemiosmotic theory of oxidative phosphorylation? 5
 - b) State the steps of pentose-phosphate pathway. 5
 - c) i) State the role of pyridoxal phosphate in transamination reaction?
ii) Discuss the role of carbamoyl synthase I in relation to urea formation? $2+3=5$
 - d) i) Discuss the synthesis of glycine from choline.
ii) Mention the difference between hexokinase and glucokinase. $3+2=5$
3. Answer any **two** questions : $10 \times 2 = 20$
- a) i) Describe the rate limiting steps of the glycolytic pathway.
ii) Discuss the anabolic roles of TCA cycle. $6+4=10$
 - b) i) What are glucogenic amino acids?
ii) Name the sources of carbon and nitrogen atoms of purine ring during de novo biosynthesis.

- iii) Discuss the catabolic pathway of pyrimidine. $1+3+6=10$
- c) i) Discuss the functions and deficiency symptoms of vitamin C.
- ii) Name two sulphur containing vitamins. $(5+3)+2=10$
- d) i) State the functions of fatty acid synthase.
- ii) Discuss briefly the steps in biosynthesis of palmitic acid.
- iii) State briefly the role of lipoprotein in lipid transport process $2+5+3=10$
-