B.Sc. 4th Semester (Honours) Examination, 2022

PHYSIOLOGY

Course ID: 42511 **Course Code: SH/PHY/401/C-8(T)**

Course Title: Energy Balance, Metabolism and Nutrition

Time: 1 Hour 15 Minutes **Full Marks: 25**

The figures in the margin indicate full marks.

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

1. Answer *any five* questions from the following: **1×5=5**

(a) Define redox potential.

(b) What do you mean by rate limiting enzyme?

(c) Define ACU with its value for normal adult male.

(d) Why TCA cycle is known as amphibolic pathway?

(e) Name any two essential fatty acids.

(f) Differentiate between hexokinase and glucokinase.

(g) What is RQ?

(h) "Dihydrofolate reductase deficiency may manifest as phenylketonuria"-Why?

2. Answer *any two* questions from the following: **5×2=10**

(a) "Gluconeogenesis is not the fully reversible process of glycolysis"-Justify the statement. 5

(b) What is substrate level phosphorylation? Write the significance of Krebs cycle. 2+3

(c) "TCA cycle is the final common metabolic pathway"- Justify the statement. 5

(d) What is meant by deamination? Discuss the process of oxidative deamination. 2+3

3. Answer *any one* question from the following: **10×1=10**

(a) Why urea is formed in two compartments of the cell? Briefly discuss how urea is formed in human body. 2+8

(b) Define BMR? How can you measure BMR of a subject using Benedict Roth apparatus? Write the significance of BMR. 2+6+2