WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 4th Semester Examination, 2020

PHYACOR08T-PHYSIOLOGY (CC8)

ENERGY BALANCE, METABOLISM, AND NUTRITION

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.

Answer any *five* questions from the following   8×5=40

1. (a) What do you mean by redox potential?   2

   (b) What is R-L cycle?   2

   (c) Describe the significances of HMP shunt.   4

2. (a) What happens when phenylalanine is accumulated in our body?   2

   (b) Urea biosynthesis is a cyclic process — Explain.   4

   (c) What is ketogenic and glucogenic amino acid?   2

3. (a) What are anaplerotic reactions?   2

   (b) How glycolysis is connected with TCA cycle?   2

   (c) Describe the payoff phase of glycolysis.   4

4. (a) Why TCA cycle is the central pathway of metabolism of the cell?   2

   (b) Name the key enzymes of TCA cycle. How they regulate TCA cycle?   4

   (c) What is the role of glycogenin?   2

5. (a) Distinguish between substrate level phosphorylation and oxidative phosphorylation.   3

   (b) What is uncoupler?   1

   (c) Mention the chemiosmotic theory of oxidative phosphorylation.   4

6. (a) What is RQ?   2

    (b) What is biological value of protein?   1

    (c) What is antivitamin?   1

    (d) Describe the role of vitamin D in calcium metabolism.   4

7. (a) Describe the process of β-oxidation of saturated fatty acid.   5

    (b) Calculate the number of ATP generated from complete oxidation of palmitic acid.   3

8. (a) What are ketone bodies?   2

    (b) How ketone bodies are synthesized?   4

    (c) Why ketone bodies formation occur in our body during starvation?   2

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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