



Name :

Roll No. :

Invigilator's Signature :

**CS/B.Tech(FT)/SEM-3/FT-302/2009-10
2009**

BIOCHEMISTRY & NUTRITION

Time Allotted : 3 Hours

Full Marks : 70

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
(Objective Type Questions)**

1. Answer the following questions : 10 × 1 = 10

A) Choose the correct alternatives of the following :

i) Which of the following is acidic amino acid ?

- | | |
|---------|------------------|
| a) Ala- | b) Gly- |
| c) Asp- | d) all of these. |

ii) The best example of PUFA is

- | | |
|------------------|--------------------|
| a) Palmitic acid | b) Lauric acid |
| c) Oleic acid | d) Linolenic acid. |

iii) The sulphur containing amino acid is

- | | |
|------------|----------------|
| a) leucine | b) isoleucine |
| c) lysine | d) methionine. |



- iv) Glycolysis occurs in
- a) Mitochondria b) Cytosol
- c) Nucleus d) Ribosome.
- v) ES complex formation is
- a) a reversible reaction
- b) an irreversible reaction
- c) an energy consuming reaction
- d) a complete reaction.
- vi) The bond forming the backbone of protein structure
- a) Peptide bond b) Covalent bond
- c) Hydrogen bond d) Ionic bond.
- vii) The non-protein part of holoenzymes is called
- a) apoenzyme b) coenzyme
- c) activator d) none of these.
- B) State whether the following statements are *True* or *False* :
- viii) Number of ATP synthesized through beta oxidation of fatty acids in 24.
- ix) Goitre is a deficiency disease due to poor Ca absorption in human system.
- x) Myoglobin is an example of glycoprotein.



GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following.

3 × 5 = 15

2. Write about Biological value and protein efficiency ratio. 5
3. What do you mean by enzyme activity ? What is specific activity ? What are the units ? 2 + 2 + 1
4. Write short note on Gluconeogenesis.
5. Write short note on quaternary structure of protein. 5
6. What are micronutrients ? Write the basic difference between nutrients, non-nutrients and micronutrients. What is RDA value ? Explain it with some suitable food references. 5

GROUP – C

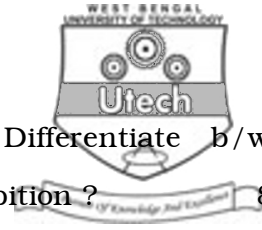
(Long Answer Type Questions)

Answer any *three* of the following.

3 × 15 = 45

7. Write down the non-oxidative stages involved in PP pathway. How is PP pathway correlated with glycolytic pathway ? Write short note on TCA cycle. 6 + 1 + 8
8. What is the role and location of TCA cycle ? Discuss its step-wise reactions and energetics. 15

CS/B.Tech(FT)/SEM-3/FT-302/2009-10



9. a) What is enzyme inhibition ? Differentiate b/w competitive and non-competitive inhibition ? 8
- b) State Lock and key model theory. 3
- c) What are coenzymes ? Discuss briefly. 4
10. Mention the physiological role of Ca, Fe, K, Zn, P in human metabolism. Is there any RDA for them ? Write the scientific name, food source, body function and deficiency disease for vitamin B 1, B 6, C, E, A.
-