

GURU NANAK INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT
2021
BIOCHEMISTRY & NUTRITION
FT401

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

(Multiple Choice Type Questions)

Answer any *ten* from the following, choosing the correct alternative of each question: **10×1=10**

		Marks	CO No
(i)	The structural units of proteins are a) Peptide bonds b) Amino acids c) Fatty acids d) None of these	1	CO3
(ii)	Which one of the following is not a macronutrient? a) Fat b) Carbohydrate c) Protein d) Vitamin	1	CO1
(iii)	In transamination reaction the amino group receptor is a a) Keto acid b) Transaminase c) Peptidase d) Amino acid	1	CO5
(iv)	How many classes of enzymes are there? a) 4 b) 3 c) 6 d) 8	1	CO3
(v)	Invertase is the other name of which enzyme? a) Lactase b) Protease c) Lipase d) Sucrase	1	CO3
(vi)	How many amino acid residues are there in a protein having 7 peptide bonds? a) 7 b) 9 c) 8 d) 14	1	CO4

vii)	EMP pathway is the other name of a) Pentose phosphate pathway b) Gluconeogenesis c) Glycolysis d) None of the above	1	CO1
viii)	Enzyme substrate binding is a a) Reversible reaction b) Irreversible reaction c) Displacement reaction d) None of the above	1	CO2
ix)	How many ATPs are synthesized during glycolysis a) 4 b) 6 c) 3 d) 2	1	CO2
x)	Major energy producing pathway in our body is a) TCA cycle b) Glycolysis c) Electron transport chain d) None of these	1	CO1,CO5
xi)	Trypsin is a a) Lipase b) Protease c) Carbohydratase d) Ligase	1	CO2
xii)	How many B vitamins are there in B-complex group? a) 12 b) 10 c) 8 d) 6	1	CO3

GROUP – B

(Short Answer Type Questions)

Answer any **three** from the following: 3×5=15

		Marks	CO No
2.	Discuss about transamination reaction with one example.	5	CO1,CO5
3.	Describe the pentose phosphate pathway.	5	CO5
4.	(a) What is the significance of biological value (BV) of proteins?	3	CO2,CO4
	(b) What is the significance of protein efficiency ratio (PER)?	2	CO2,CO4
5.	(a) What are the roles of vitamin B12 in our body?	4	CO3
	(b) Riboflavin is the scientific name of which vitamin?	1	CO3
6.	Classify carbohydrates based on structural subunits with examples.	5	CO3

GROUP – C
(Long Answer Type Questions)
 Answer any *three* from the following: 3×15=45

			Marks	CO No.
7.	(a)	Describe the process of protein digestion in our body.	10	CO1,CO5
	(b)	How the chemical score of a protein is calculated?	4	CO4
	(c)	Give example of one source of plant protein.	1	CO3
8.	(a)	What are the basic properties of enzymes.	6	CO3,CO5
	(b)	Describe the nomenclature and classification of enzymes based on their activity.	9	CO3
9.	(a)	Describe the process of linearization of Michaelis-Menten equation with derivation.	7	CO3,CO4
	(b)	What is allosteric activation and allosteric inhibition? Explain with diagram.	8	CO3
10.	(a)	Describe the process of omega oxidation of fatty acids.	8	CO2,CO3,CO5
	(b)	Describe the roles of different lipases in lipid/fat metabolism.	7	CO2,CO3
	(c)	Extra fat is stored in which type of cells in our body?	1	CO3
11.	(a)	Describe the roles of vitamins in human nutrition with example.	10	CO2,CO3
	(b)	Discuss on basal metabolic rate.	5	CO2