

RANI RASHMONI GREEN UNIVERSITY

M.Sc. 1st Semester Examination, 2024

Subject: NUTRITION AND PUBLIC HEALTH

Course code: GNPHT-13

(Unit 1-Major Nutrients and Nutritional Biochemistry and Physiology; Unit 2-Vitamins, Minerals and Trace Elements, Enzymes and Dietary Fibres)

Time: 2 hrs

FM= 40

Answer any three from each unit and two from any unit of your choice from the following questions:

Unit:1

1.a) What is lipid?

b) Classify the fatty acids according to their unsaturation with examples.

c) Write down one source of polyunsaturated fatty acid. 2+2+1= 5

2.a) What is meant by the primary structure of a protein?

b) State the difference between essential and non-essential amino acids with examples. 2.5+2.5= 5

3.a) Give a brief account of amino acid classification based on their properties.

b) What is the effect of a high protein diet on kidney health? 4+1= 5

4.a) Give examples of two reducing and two non-reducing sugars.

b) Write the process of glycolysis in brief. 2+3= 5

5. Write the steps of TCA cycle with enzymes and co-enzymes involved. 5

6. Write short notes on any two of the followings: (2.5×2= 5)

a) Omega 3 fatty acid

b) Diabetes mellitus

c) Hardening and rancidity of lipid

d) Marasmus

Unit: 2

7.a) What is a nutraceutical?

b) What are some common sources of nutraceuticals?

c) Briefly explain the different classes of nutraceuticals based on their chemical composition. Give example of each class. $1+1+3= 5$

8.a) Differentiate between dietary fibers and functional fibers.

b) What are the different types of dietary fiber– explain the mode of action and give example.

$2+3= 5$

9.a) Classify enzymes. What role do they play in biological processes?

b) State the difference between coenzymes and cofactors. $2+1+2= 5$

10.a) Discuss the role of Ascorbic acid.

b) Mention the sources of Ascorbic acids. $3+2= 5$

11. Discuss the role of calcium and Vitamin D in bone formation. $2.5+2.5= 5$

12. Write short notes on any two of the followings: (2.5×2= 5)

a) Osteoporosis

b) Probiotic and prebiotic

c) Beriberi

d) Role of dietary fiber in weight management