

2019

Part – II

NUTRITION

(Honours)

Paper – III

Full Marks – 90

Time : 4 Hours

The figures in the right hand margin indicate marks.

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

Illustrate the answers wherever necessary.

UNIT – 5

GROUP – A

1. Answer any **five** questions from the following :

5×2=10

- (a) What is isoelectric P^H ?
- (b) What is Brownian Motion ?
- (c) What is secondary active transport ? .
- (d) Define glycemic index.
- (e) What is thermogenin ? State its role in body heat generation.
- (f) Define nutraceutical.

- (g) What do you mean of soluble and insoluble dietary fiber ?
- (h) Define nutarotation.

GROUP – B

Answer any **four** questions from the following :

4×5=20

2. Describe the role of buffer in the regulation of blood PH. 5
3. Describe the process of osazone formation. How can reducing keto sugars be identified by chemical tests ? 3+2
4. Briefly describe the process of transcription in pro-karyotes. What is melting temperature (T_m) ? 4+1
5. Describe the chemical steps involved in the synthesis of phosphoenol pyruvate from pyruvate in gluconeogenesis. 5
6. Describe the parive transport through the cell membrane. 2+3
7. Write down the steps of TCA cycle with their corresponding enzymes that are involved in generation of carbon dioxide. Define chemiosmotic hypothesis for ATP generation. What is substrate level phosphorylation ? 2+2+1
8. How vitamin K helps in blood coagulation ? What are the defficiency symptoms of vitamin A ? 2+3

GROUP - C

Answer any **one** question : 1×15

9. (a) Give a comparative account on the α helix and β -pleated sheet of protein secondary structure. 4
- (b) What are phospholipids ? Name the principal phospholipids of cell membrane. What do you mean by 'membrane assymetry' ?
(1+2+2)
- (c) What is Beer-Lambert law ? 2
- (d) 'HDL is a healthy lipoprotein' - Justify. 4
10. (a) Describe the orthinine cycle. 5
- (b) What is IDD ? State the defficiency symptoms. 1+2
- (c) Elaborate the role of Vitamin B complex in Red blood cell production ? What is megaloblastic anemia ? Why is ascorbic acid essential for good skin quality ? 4+1+2

UNIT - 6

GROUP - D

11. Answer any **five** questions from the following :

5×2=10

- (a) What are food additives and adulterants ?
- (b) Name the different types of salts.
- (c) What is fast food ?
- (d) Name two milk products. Give two nutritional aspects of coffee.
- (e) Why whole fruit consumption is beneficial over fruit juice consumption ?
- (f) What are raising and leavening agents ?
- (g) Give the fuel form of ISI and AGMARK.
- (h) Give two advantages of convenience foods.

GROUP – E

Answer any **four** questions from the following : $4 \times 5 = 20$

12. State the principle of food preservation by refrigeration. 5
13. Write the compositional difference between cow milk and human milk. What is 'double toned milk' ? 3+2
14. Write down the merits and demerits of GM food. 5
15. What is meant by chemical and biological fortification. Illustrate briefly. $2 \frac{1}{2} + 2 + \frac{1}{2}$
16. Discuss the types and importance of natural sweeteners. 5
17. How does microbial spoilage destroy meat and fish ? 5
18. State the merits and demerits of fast food. 5

GROUP – F

Answer any **one** question : 1×15

19. (a) Write the different varieties of cereals. State the nutritional aspects of each. 5
(b) Give the harmful effects of food colour. 5
(c) Write a note on "food security". $(3+4)+3+5$
20. Write short note on the following : 3×5
 - (a) Food storage
 - (b) Aerated Beverages
 - (c) Nutritional aspect of jams and jellies