

CARMEL COLLEGE OF ARTS, SCIENCE AND COMMERCE, NUVEM – GOA

POST GRADUATE DEGREE STUDIES (AFFILIATED TO GOA UNIVERSITY)

M.Sc. (I) Food Technology (Semester I) Examination, January 2021

FTC 101: FOOD BIOCHEMISTRY AND NUTRITION

Duration: 2 hours

Date: 11 JANUARY 2021

Max. Marks: 45

INSTRUCTIONS:

1. **Section I** is compulsory.
2. Answer **any 3** questions from **Section II**.
3. Figures on the right indicate maximum marks assigned to the question.

SECTION I

Q1. A. Justify the following statements with appropriate examples:

(5 x 2 marks = 10 marks)

- a. Anemia results from more than a mere deficiency of iron.
- b. A low carbohydrate intake can result in both muscle wasting and a fruity smelling breath.
- c. A zero-fat diet can cause keratomalacia.
- d. There exists a difference between resistant starches and dietary fibres.
- e. Natural food pigments provide human health benefits.

Q1. B. Elaborate on any 1 of the following with the help of explanatory pathways/diagrams:

5 marks

- a. Glycogenolysis
- b. Glycogenesis

SECTION II

Q2. Do as directed (any 5):

(5 x 2 marks = 10 marks)

- a. Describe 2 tests that can be used to determine the quality of protein in a food.
- b. List the energy barriers that prevent a simple reversal of glycolysis.
- c. Define the following, giving one dietary example of each:
 - (i) Cholesterol
 - (ii) PUFA
 - (iii) Complex Carbohydrate
 - (iv) Water-Soluble Vitamin
- d. Describe the Triangle Test used in Sensory Evaluation of Foods.
- e. Explain any 2 functions of dietary fat.
- f. Define the term “mutual supplementation” and provide a dietary example of the same.
- g. What are biogenic amines?

Q3. Elaborate upon any 1 of the following:

10 marks

- a. Beta oxidation of Fatty Acids
- b. Citric Acid Cycle

Q4. Write short notes on any 2 of the following:

(2 x 5 marks = 10 marks)

- a. Digestion and Absorption of Proteins
- b. Browning Reactions in Foods
- c. Emulsions
- d. Digestion and Absorption of Fats

Q5. Discuss, in detail, any 1 of the following:

10 marks

- a. Energetics of Aerobic and Anaerobic Glycolysis
- b. Transamination, Deamination, and Decarboxylation Reactions and their Importance

Q6. Briefly discuss any 2 of the following:

(2 x 5 marks = 10 marks)

- a. Different types of supplemental protein
- b. The role of vitamin D and iodine in health
- c. Anti-nutritional factors in foods
- d. Deficiencies associated with B-complex vitamins
