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St Aloysius College (Autonomous)**Mangaluru****Semester I – P.G. Examination – M.Sc. Food Science Nutrition and Dietetics
February - 2022****FOOD CHEMISTRY**

Time: 3 hrs.

Max Marks: 70

I. Answer any SIX of the following:**(6x3=18)**

1. Define relative vapor pressure.
2. Write a note on importance of water and respective chemistry of ice formation.
3. Write a note on sorption isotherm.
4. What do you mean by Lipolysis?
5. Write a note on PER and its applications.
6. Super-secondary Structure of proteins.
7. Write a short note on BV and NPU.

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II. Answer any FOUR of the following:**(4x7=28)**

8. Explain in detail about oxidative rancidity and microbial rancidity.
9. Write in detail about browning phenomenon in food with advantages and disadvantages.
10. Explain denaturation of proteins.
11. What are the changes in respect to vitamins and minerals encountered during storage and processing?
12. Give an account on quantitative analysis of proteins.

III. Answer any TWO of the following:**(2 x12=24)**

13. Explain the physical and chemical properties of fats and oils.
14. Give a detailed account on carbohydrates;
 - a. Classification & sources.
 - b. Functional properties.
15. Elaborate on utilization of enzyme in food industries.

PH 812.1

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Semester I – P.G. Examination – M.Sc. Food Science Nutrition and Dietetics
February - 2022

PRINCIPLES OF FOOD PROCESSING AND PRESERVATION

Time: 3 hrs.

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Max Marks: 70

I. Answer any SIX of the following:

(6x3=18)

1. What are intermediate moisture foods and list any two advantages.
2. Write a note on factors affecting the frying process.
3. Write short note on physical factors affecting food spoilage.
4. Write short note on ohmic heating.
5. Write short note on refrigeration load.
6. What is rehydration and reconstitution of food.
7. Write a note on packaging material designed for processed food.

II. Answer any FOUR of the following:

(4x7=28)

8. Discuss on various types of heat treatment and its effects on foods.
9. Explain in detail about Pulse electric field.
10. Explain freezing curve and brief on any three freezing methods.
11. Discuss briefly on canning process and its defects.
12. Explain frying process and mechanism of oil uptake during frying.

III. Answer any TWO of the following:

(2 x12=24)

13. Explain in detail about the refrigeration process and brief on the changes in foods during refrigeration
14. Discuss briefly on food Irradiation and explain the interaction of radiation with food components.
15. Discuss briefly on conventional preservation methods with advantages and disadvantages.

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Semester I – P.G. Examination – M.Sc. Food Science Nutrition and Dietetics

February - 2022

Human Nutrition

Time: 3 hrs.

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(6x3=18)

I. Answer any SIX of the following:

1. How and why have the energy requirements for Indians changed over time?
2. What is Protein Energy Ratio (PER)? What are the recommendations for women and children?
3. What are the nutrient recommendations of Fe for different age group?
4. Write a note on Type 1, Type 2 and gestational diabetes
5. Write a note on the factors that influence food intake.
6. Write a note on nitrogen balance
7. Classify amino acids in terms of indispensability.

II. Answer any FOUR of the following:

(4x7=28)

8. What are the various categories within the Dietary Recommended Intake? What is the purpose of each?
9. Explain the role of Insulin, Glucagon, Epinephrine and Cortisol in maintaining blood glucose levels.
10. Discuss the role of lipoprotein in CVD.
11. Discuss the indirect methods of determining energy expenditure.
12. Elaborate on the digestion, absorption and transport of dietary fats.

III. Answer any TWO of the following:

(2 x12=24)

13. Illustrate and explain:
 - a) Glycolysis
 - b) Krebs Cycle
14. Discuss the metabolism of proteins and illustrate the urea cycle.
15. Discuss in detail with illustrations the pathways involving all the lipoproteins in metabolism of dietary fats.

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Mangaluru**

Semester I – P.G. Examination – M.Sc. Food Science Nutrition and Dietetics

**February - 2022
Human Physiology**

Time: 3 hrs.

Max Marks: 70

I. Answer any SIX of the following:

(6x3=18)

1. Draw a neat labelled diagram of cell?
2. List down the basic types of transport across the membrane.
3. What is erythropoiesis?
4. Explain the role of hemoglobin a buffer system
5. Write a short note on pituitary gland.
6. Explain the functions of skin.
7. How is hormone secretion regulated?

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II. Answer any FOUR of the following:

(4x7=28)

8. Explain the process of cell signaling
9. Explain the structure and function of thymus and pineal gland
10. Explain the process for formation of urine
11. Draw a neat labeled diagram of neuron. Explain the mechanism of signal conduction.
12. Discuss on Blood groups and their role in blood transfusion

III. Answer any TWO of the following:

(2 x12=24)

13. Discuss on the following:
 - i) Regulation of food intake.
 - ii) Hunger and satiety.
14. Draw and explain the regulation of heart in blood pressure.
15. Give a detailed account on the following:
 - i) Types of muscles.
 - ii) Disorders the skeletal system.

PS 817.1

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Semester I – P.G. Examination – M.Sc. Food Science Nutrition and Dietetics

February - 2022

ESSENTIALS OF MICRONUTRIENTS

Time: 3 hrs.

Max Marks: 70

I. Answer any SIX of the following:

(6x3=18)

1. What are the body fluids?
2. Give the sources of Vitamin D, K and E.
3. Write any three roles of electrolyte
4. Make a mention on toxicity of Vitamin A and Iodine?
5. Give RDA of Vitamin B5 and Biotin
6. Write a note on deficiency of Niacin.
7. Write a note on Hemosiderosis?

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II. Answer any FOUR of the following:

(4x7=28)

8. Discuss the regulation of sodium balance in body.
9. Discuss Folate cycle and functions of FMN.
10. Explain the metabolic functions of Potassium and Phosphorous.
11. Discuss on Copper deficiency and toxicity.
12. Explain the role of B6 and B12 in human nutrition.

III. Answer any TWO of the following:

(2 x12=24)

13. Elaborate on:
 - a) The metabolic function of Vitamin C
 - b) The antioxidant function of Vitamin E,
14. Illustrate and discuss metabolism of Iron in enterocyte and hepatocyte.
15. Discuss on:
 - a) Deficiency of Thiamine
 - b) The hormonal regulation of Calcium
