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DMI-ST. EUGENE UNIVERSITY

ZAMBIA

DEGREE EXAMINATION – JUNE 2024

Semester: I

800 FP 102 PRINCIPLES OF NUTRITION

Time: 3:00 Hours

Max. Marks: 100

Answer any FIVE Questions (5 x 20 = 100 Marks)

1. a) Carbohydrates are essential Macronutrients for the human body; explain the chemical structure of carbohydrates mentioning the functions groups used to classify them and the various forms they exist in the body. **(3 Marks)**
b) Give a detailed classification of carbohydrates. **(7 Marks)**
c) Explain the process of carbohydrate digestion in the human body, including the enzymes involved and the sites of action. **(10 Marks)**
2. a) Discuss potential factors that could contribute to impaired carbohydrate digestion in the patient, such as enzyme deficiencies. **(10 Marks)**
b) The following are complications of diabetes type 2; Retinopathy, Nephropathy, Neuropathy. Give brief comments. **(4 Marks)**
c) Discuss some of the causes of diabetes type 2. **(6 Marks)**
3. a) Discuss metabolic problems associated with proteins. **(10 Marks)**
b) Highlight on the factors affecting protein synthesis. **(10 Marks)**
4. a) Explain on Calorimetry evaluation of proteins and partition of food energy. **(10 Marks)**
b) Elucidate on Feeding during lactation and pregnancy. **(10 Marks)**
5. a) How can knowledge about food toxins help consumers make informed choices about food safety and minimize potential health risks associated with contaminants or additives in their diet? **(10 Marks)**
b) In what ways do psychological factors, such as stress or emotional state, influence an individual's ability to control their food intake, and how can this understanding be applied in

developing effective strategies for weight management? **(10 Marks)**

6. a) Proteins are essential Macronutrients for the human body, explain the chemical structure of proteins mentioning the functions groups involved. **(3 Marks)**
- b) Give a detailed classification of proteins. **(4 Marks)**
- c) Explain the process of protein digestion in the human body, including the enzymes involved and the sites of action. **(13 Marks)**
7. a) Elucidate on amino acid toxicity and imbalances. **(10 Marks)**
- b) How does the processing of food affect the quality of protein, especially when considering its impact on nutritional value and absorption in the body? **(10 Marks)**