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**University Examinations 2016/2017**

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN HUMAN NUTRITION AND DIETETICS.

**AFN 3200: MACRONUTRIENTS**

**DATE: DECEMBER, 2016 TIME: 2 HOURS**

**INSTRUCTIONS: -** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Using examples briefly explain what you understand by the following:
2. Macronutrients (4 marks)
3. Condensation (3 marks)
4. Hydrolysis (3 marks)
5. Denaturation (3 marks)
6. State the three classes of lipids. (3 marks)
7. Peter is 15 years old, weighs 50 kilograms and is 1.5 meters tall. Calculate his RDA for proteins. (2 marks)
8. State the three disaccharides commonly found in foods and their component monosaccharides. In which foods are these sugars found? (6 marks)
9. Briefly explain the chemical structure of an amino acid. (1 mark)
10. Briefly explain the meaning of the term “*omega*” with respect to fatty acids. Describe the roles of the omega fatty acids in disease prevention. (5 marks)

**QUESTION TWO (20 MARKS)**

1. Briefly explain what you understand by a high-quality protein. Describe the factors that affect the quality of dietary protein. (10 marks)
2. Discuss roles proteins play in the human body. (10 marks)

**QUESTION THREE (20 MARKS)**

1. Briefly explain the harmful effects of excessive fiber intake. (6 marks)
2. Describe carbohydrate digestion and absorption. Explain the role of fiber in the process. (14 marks)

**QUESTION FOUR (20 MARKS)**

Discuss Protein Energy Malnutrition (PEM). (20 marks)