



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya.

Tel: 020-2069349, 061-2309217. 064-30320 Cell phone: +254 712524293, +254 789151411

Fax: 064-30321

Website: www.must.ac.ke Email: info@mucst.ac.ke

University Examinations 2015/2016

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

AFN 3200: MACRONUTRIENTS

DATE: NOVEMBER 2015

TIME: 2 HOURS

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

QUESTION ONE (30 MARKS)

- a) Briefly explain what you understand by the following:
- (i) Macronutrients. (2 Marks)
 - (ii) High quality proteins. (1 Mark)
 - (iii) Nitrogen balance. (4 Marks)
- b) Describe how fibres differ from the other polysaccharides. (2 Marks)
- c) Explain the similarity and difference between starch and glycogen. (2 Marks)
- d) Name the three monosaccharides important in nutrition. (3 Marks)
- e) Briefly describe the structures of polysaccharides and name the ones important in nutrition. (4 Marks)
- f) Jane weighs 65 kilograms and is 1.5 meters tall. Calculate her RDA for proteins. (3 Marks)
- g) Describe how the chemical structure of proteins differ from the structures of carbohydrates and fats. (2 Marks)

h) Briefly explain the meaning of lactose intolerance and explain how it can be managed.

(4 Marks)

i) Outline the negative health effects of sugars. Briefly explain the dietary recommendations regarding concentrated sugar intakes.

(3 Marks)

QUESTION TWO (20 MARKS)

a) 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)

b) Discuss some of the roles proteins play in the human body.

(15 Marks)

QUESTION THREE (20 MARKS)

a) Briefly explain what you understand by “hydrogenation” in the manufacture of fats and explain its advantages.

(5 Marks)

b) Describe marasmus and kwashiorkor. How can the two conditions be distinguished, and in what ways do they overlap?

(15 Marks)

QUESTION FOUR (20 MARKS)

a) Name three classes of lipids found in the body and in foods. Explain their functions in the body.

(5 Marks)

b) Describe carbohydrate digestion and absorption. Explain the role of fibre in the process.

(15 Marks)