**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**](http://www.must.ac.ke) **Email:** **info@must.ac.ke**

**University Examinations 2016/2017**

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

**AFN 3100: INTRODUCTION TO NUTRITION AND DIETETICS**

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

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

**QUESTION ONE (30 MARKS)**

1. Describe the Glycemic index. (2 marks)
2. Explain the connection between vitamin A and vision stating the stages of manifestations of its deficiency. (5 marks)
3. The absorption of non-haem iron is significantly influenced by various food components. Identify four such components suggesting two ways to counteract this negative influence. (6 marks)
4. Dietary Reference Intakes (DRIs) are tools used by consumers to make healthier food choices. Distinguish between the Estimated Average Requirement (EAR) and Recommended Dietary Allowance (RDA) (4 marks)
5. Compare the following:
6. Calcium and Phosphorous (2 marks)
7. Osteomalacia and Osteoporosis. (2 marks)
8. Briefly explain four health benefits of dietary fiber to the human body. (8 marks)
9. Explain each of the following terms in one sentence
10. Villi (1/2 marks)
11. Lysine (1/2 marks)

**QUESTION TWO (20 MARKS)**

1. The ingredients listed below are for a cheese sauce.

**Cheese sauce**

40 g butter

40 g plain flour

500 ml milk

100 g grated cheese

Salt and pepper

1. Explain why the sauce is not suitable for someone suffering from coeliac disease? (2 marks)
2. Discuss three ways the sauce could be modified to follow healthy eating guidelines. (6 marks)
3. As a District Nutrition Officer, you are assigned to carry out a survey on Vitamin A deficiency in a District. Clearly describe the different disorders you would expect. (12 marks)

**QUESTION THREE (20 MARKS)**

1. Dietary diversity is a practical approach used to address both macro-and micronutrient deficiencies in Kenya today. Broadly discus four strategies which promote and facilitate dietary diversification to achieve complementarity of cereal or tuber-based diets. (12 marks)
2. Discuss four ways each of the following play a protective role in human health. (8 marks)
3. Anti-oxidants
4. probiotics

**QUESTION FOUR (20 MARKS)**

1. Iodine deficiency is one of the most common causes of poor health and development status in the developing world today. Outline 3 causes of the deficiency discussing three intervention measures you would initiate to curb the problems. (9 marks)
2. Discuss on the digestion and absorption of;
3. Carbohydrates (6 marks)
4. Lipids (5 marks)