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University Examinations 2015/2016

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

AFN 3201: MICRONUTRIENTS

DATE: NOVEMBER 2015

TIME: 2 HOURS

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

QUESTION ONE (30 MARKS)

- a) List four ways in which vitamin losses can be minimized. (4 Marks)
- b) Identify five factors that may influence the bioavailability of vitamins. (5 Marks)
- c) Outline the major functions of sodium in the body and describe how the kidneys regulate blood sodium. (5 Marks)
- d) Briefly explain the roles of vitamin A and beta-carotene. (8 Marks)
- e) Name significant food sources of calcium. Briefly explain the consequences of inadequate intakes. (6 Marks)
- f) State the risks associated with high doses of the following:
 - (i) Phosphorus.
 - (ii) Vitamin C. (2 Marks)

QUESTION TWO (20 MARKS)

a) Describe the similarities and differences in the absorption and regulation of iron and zinc.

(8 Marks)

b) Describe the general differences between fat-soluble and water-soluble vitamins.

(12 Marks)

QUESTION THREE (20 MARKS)

a) Describe the characteristics of minerals that distinguish them from vitamins. (8 Marks)

c) Distinguish between heme and non-heme iron. (4 Marks)

b) Discuss the factors that enhance iron absorption. (8 Marks)

QUESTION FOUR (20 MARKS)

a) Because it is difficult to excrete iron once it is in the body, balance is maintained primarily through absorption. Explain this statement. (5 Marks)

b) Briefly explain the most vulnerable stages of life for iron deficiency. (6 Marks)

c) Discuss the digestion and absorption of vitamin B₁₂ and explain why vitamin B₁₂ deficiency is common among the elderly. (9 Marks)