



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DIPLOMA IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2012

TITLE OF PAPER : NUTRITION

COURSE CODE : HSC 201

DURATION : 2 HOURS

MARKS : 100

INSTRUCTIONS :

- READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
- : ANSWER ANY FOUR (4) QUESTIONS
- : EACH QUESTION CARRIES 25 MARKS.
- : WRITE NEATLY & CLEARLY
- :
- BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER.

DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR.

Question 1

- (a) Briefly discuss some characteristics of any 10 amino acids. [20 Marks]
- (b) With the aid of the diagrams outline the structures of five amino acids that belong to the Nonpolar Aliphatic R groups category [5 Marks]

Question 2

- (a) Which of the monosaccharides are known to be the main constituents of the nucleic acids? [2 Marks]
- (b) Name the monosaccharide that has therapeutic value as a replacement carbohydrate in the diet of diabetics and in parents that are breast feeding. [1 Marks]
- (c) Briefly give an account why xylitol is referred to possess some medically therapeutic value in human beings. [2 Marks]
- (d) Discuss the digestion, absorption and transportation of carbohydrates in human beings. [20 Marks]

Question 3

Write short notes about any five (5) listed nutrition terms/concept.

- (i) Biological value, [5 Marks]
- (ii) Cholesterol, [5 Marks]
- (iii) Anthropometry, [5 Marks]
- (iv) Basal metabolic rate (BMR), [5 Marks]
- (v) Carotenoids in Food, [5 Marks]
- (vi) Major function of minerals in human body. [5 Marks]

Question 4

- (a) Discuss the role of Calcium in the buildup and function of the body of man. [20 Marks]
- (b) Give an account of substances that can interfere with the absorption of Calcium. [5 Marks]

Questions 5

- (a) What are the sources of contamination of food raw materials? [10 Marks]
- (b) Given that the pka value of acetic acid is 4.7;
- (i) Calculate the distribution coefficients of acetic acid in food at the following pH value; 5.7, 3.7, and 4.7. [10 Marks]
- (ii) Comment about the effectiveness of acetic acid as a preservative in the outlined pH. [5 Marks]