

**POSTGRADUATE INSTITUTE OF MEDICINE**  
**UNIVERSITY OF COLOMBO**

**MSc IN HUMAN NUTRITION EXAMINATION - SEPTEMBER 2014**

**Date :- 3<sup>rd</sup> September 2014**

**Time :- 9.00 a.m.- 12.00 noon**

**STRUCTURED ESSAY PAPER**

Answer **all six (06)** questions.  
Each question to be answered in a separate book.

1.
  - 1.1. Distinguish between Commercial Sterilization and Aseptic Processing/Packaging. (25 marks)
  - 1.2. Discuss “extrusion cooking technology” in relation to food industry and nutrition. (25marks)
  - 1.3. Discuss the role of lactic acid bacteria in yoghurt production and its effects on nutrition. (25 marks)
  - 1.4. Briefly describe a processing method for preventing occurrence of mycotoxin that is responsible for extensive necrosis of liver, found in uncooked grains during storage. (25 marks)
2. A significant proportion of adolescents in an urban school in District A are obese. You have been asked to help devise a programme to improve the nutritional status of the children of this school.
  - 2.1. Discuss the use of the “Triple A Process” in addressing this problem. (30 marks)
  - 2.2. Describe briefly three (03) key steps required to make this a health promoting school. (30 marks)
  - 2.3. Describe giving reasons the most appropriate health education intervention you would use, in promoting intake of local fresh vegetables and fruits among these adolescents. (40 marks)

Contd...../2-

3.

3.1. List five (05) differences between colostrum and mature milk. (10 marks)

3.2. "The composition of breast milk is variable".  
Discuss the benefits of the above phenomena to the infant and young child.  
(40 marks)

3.3. Briefly describe the objectives of introducing complementary foods.  
(15 marks)

3.4. Describe the quantity, frequency and consistency of complementary foods given to infants in the age groups of 6-8 months and 9-11 months.  
(35 marks)

4. A 55 year old male who was a chronic alcoholic was admitted to the surgical ward with a three month history of decreased appetite, marked weight loss and progressive difficulty in swallowing. On examination, the patient was cachectic and was moderately dehydrated. Initial investigation findings indicated electrolyte abnormalities. During the period he was being investigated for his condition, the patient was managed symptomatically with intravenous fluids. His energy needs were calculated to be 2200 kcals/day and he was started on enteral feeding through a nasogastric tube.

4.1. List the possible micronutrient deficiencies that are likely to be present in this patient.  
(10 marks)

4.2. Describe the adaptations of the body, to a marked long term deficit of food consumption.  
(40 marks)

4.3. On the 4<sup>th</sup> day of hospital stay he was diagnosed with "re-feeding syndrome" as he was confused and had severe muscle weakness and carpopedal spasms.  
Briefly describe the pathophysiological basis of this condition. (20 marks)

4.4. What are the likely principles that should have been followed when starting enteral feeding in this patient?  
(30 marks)

Contd..../3-

5. A preliminary assessment has already been conducted by a national nutrition research institute in a refugee camp and has identified about 30 cases of severe acute malnutrition (SAM) from a convenient sample of 200 children under five years. This has raised considerable concern.

Following food rations were provided for this population

Commodity	Grams per person per day
Rice	328
Pulses (peas, lentils or beans)	96
Oil	16
Corn Soya Blend	32
Salt (iodised)	8

The health situation in the camp is generally good with no epidemics reported. The prevalence of global acute malnutrition in under 5 children is about 30%.

- 5.1. Based on the information provided what are the factors you would consider for further intervention/s. (30 marks)
- 5.2. What additional information is required to support further intervention/s? (20marks)
- 5.3. Describe the intervention/s that you would consider in improving the nutrition status in this population. (50 marks)
- 6.
- 6.1. Discuss giving reasons the suitable anthropometric measures that are available to identify risk factors for non communicable diseases (NCDs) in adults in the community. (40 marks)
- 6.2. Describe the interpretation of these measures in terms of NCDs. (20 marks)
- 6.3. Briefly describe the possible interventions to minimize risk factors identified using anthropometric measures. (40 marks)