

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MSc IN HUMAN NUTRITION EXAMINATION – JANUARY 2016

Date: 6th January 2016

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. An 18 year old estate worker had a haemoglobin concentration of 10.0 g/dl at the first visit to the antenatal clinic at 12 weeks of gestation and she was provided with anthelmintic therapy, iron, folic acid, vitamin C and calcium supplements. As pallor was observed during the follow up visit at 24 weeks of gestation, her haemoglobin was tested and it was 8 g/dl.
 - 1.1. List the factors that may have contributed to anaemia in this woman at the initial visit. (15 marks)
 - 1.2. Name the measurements/laboratory tests that are useful in determining the aetiology of anaemia. (15 marks)
 - 1.3. Discuss the possible reasons for the situation observed at 24 weeks. (30 marks)
 - 1.4. Describe the nutritional management to improve her condition. (40 marks)

2. A 53-year-old patient with a BMI of 15 kg/m², with active Crohn's disease for three years was admitted with a weight loss from 50 to 40 kg over a period of four-months. She had developed an enterovesicular fistula. Clinical assessment revealed depression, apathy and weakness with oedema and a serum albumin of 15 g/L, reflecting inflammation and serous losses from the infected fistula.
 - 2.1. List the steps in the assessment of her nutritional status. (15 marks)
 - 2.2. List the nutritional problems identified. (10 marks)
 - 2.3. Calculate the nutritional requirements of this patient. (25 marks)
 - 2.4. Describe the medical nutrition therapy of this patient. (50 marks)

Contd...../2-

3.

- 3.1. From a nutritional and food safety point of view, briefly describe the issues related to the following methods of processing, and measures to overcome such issues;
- 3.1.1. Milling of rice. (20 marks)
- 3.1.2. Minimal processing of vegetables. (20 marks)
- 3.2. Discuss each of the following methods of eliminating anti-nutrients in legumes.
- 3.2.1. one (1) thermal method with an example of a value added product. (15 marks)
- 3.2.2. one (1) non-thermal method with an example of a value added product. (15 marks)
- 3.3. Describe the health benefits of probiotics. (30 marks)

4.

- 4.1. How would you differentiate between a full breast and an engorged breast in a woman breast feeding her 2 week old baby? (30 marks)
- 4.2. List five (5) causes of breast engorgement. (20 marks)
- 4.3. Describe the management of breast engorgement. (50 marks)

5. An underweight child of 4 years from a coastal fishing village presented with anaemia to the nutrition clinic in the hospital. The social and dietary history revealed that the yield of fish is sold mainly to buyers outside the village and money is spent largely to buy rice, instant foods and imported fruits such as apples and oranges. Most of the children in the village are fed on commercial foods, with minimal animal sources of food and limited vegetables and fruits.

- 5.1. List five (5) expected nutritional issues of children in the above village. (15 marks)
- 5.2. List five (5) practices you could promote to improve nutrition of children in the above village. (15 marks)
- 5.3. Describe how you would manage this child in the nutrition clinic. (30 marks)
- 5.4. Describe the challenges in changing the nutritional behavior of the family and village and suggest ways of overcoming them. (40 marks)

Contd...../3-

6. A study had been conducted to determine the association between hypertension and selected anthropometric and socio-demographic factors among adults aged 18 years and above. The results of the association between hypertension and the factors investigated are given below;

Table – The association between hypertension and selected anthropometric and socio-demographic factors

Variables	Men	Women	p value	Odds Ratio (95% Confidence Interval)
Mean Body Mass Index (BMI) kg/m ²	24.2	27.3	<0.001	-
Age ≥55 versus <55 years	-	-	-	7.0 (3.7 -12.1)
Waist circumference ≥90 cm versus <90cm	-	-	-	3.0 (1.6-6.5)
Residence: Capital city versus Rural areas	-	-	-	0.3 (0.2 – 0.8)
Sex: Females versus Males	-	-	-	1.9 (0.8 – 3.2)

- 6.1. Interpret the results of BMI and state the statistical test applied. (20 marks)
- 6.2. Interpret the results of hypertension and the association between age, waist circumference, residential area and sex. (60 marks)
- 6.3. State two statistical tests that could be used to determine the probability of association between hypertension and age, waist circumference, residential area and sex. (20 marks)