# POSTGRADUATE INSTITUTE OF MEDICINE
## UNIVERSITY OF COLOMBO

## MSc IN HUMAN NUTRITION EXAMINATION – FEBRUARY 2022

**Date:-** 23rd February 2022                    **Time:-** 9.30 a.m. - 12.30 p.m.

## STRUCTURED ESSAY QUESTION PAPER

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

1.

1.1.   A 7-month-old child is investigated for failure to thrive. He passes 3-4 greasy stools each day. Sweat test was positive and awaits genetic confirmation of cystic fibrosis.

Outline the dietary management of this child.                    (25 marks)

1.2.   A 2-month-old exclusively breast-fed baby passed semi formed mucoid stools 3 to 5 times each day for the last 12 days. There had been specks of blood in the stools and bouts of crying just before passing stools. Examination revealed pallor but otherwise clinically normal. Haemoglobin is 7.8g/dL. Blood picture suggests iron deficiency anaemia.

Outline the management of this baby.                    (25 marks)

1.3.   A 2-year-old child presents with persisting diarrhoea of 10 days duration. Child has 8 to 10 bouts of loose stools per day, passing a lot of flatus each time. 500 grams of weight was lost during this period. In addition to three main meals, the child receives 4 formula milk feeds of 120 to 150 ml each. Child is thirsty, drinks a lot of water and urine output has reduced. There is no vomiting, but mild dehydration is observed. Perianal region is excoriated. Mother is worried about the child losing weight.

Outline the management of this child.                    (25 marks)

1.4.   A 16-month-old child who was growing along the minus 2 SD line of weight-for-age chart has crossed standard deviation lines upward over last 4 months. Current weight-for-height lies between median and plus 1 SD. Parents are concerned about the child becoming overweight and seek your opinion on further management.

Outline the initial management of this child.                    (25 marks)

2. A 26-year-old girl consults you to gain weight. Her current body weight is 34 kg and height is 158 cm.

2.1. List three (03) basic blood investigations to exclude medical conditions giving reasons. (15 marks)

2.2. Outline salient dietary history and examination points relevant to this patient. (30 marks)

2.3. Discuss the dietary management for this patient. (50 marks)

2.4. State type of exercises that you would recommend to improve muscle mass in this patient. (05 marks)

3. A 17-year-old adolescent girl with a BMI of 24 kg/m$^2$ was brought to her doctor by her mother as she was not attentive at school. On questioning, her diet was poor in foods of animal origin and she did not play outdoors at all, preferring computer games.

3.1. Describe the potential nutritional issues in this girl. (20 marks)

3.2. Discuss the nutritional principles relevant to the recommendations you would suggest in management. (40 marks)

3.3. List five (05) key Food Based Dietary Guidelines for Sri Lankans. (10 marks)

3.4. Outline the main interventions adopted to address three (03) key micronutrient deficiencies in Sri Lanka. (30 marks)

4.

4.1. List five (05) nutritional problems associated with HIV/AIDS infection. (15 marks)

4.2. What are the major causes of wasting in HIV/AIDS patients? (15 marks)

4.3. Outline the nutritional consequences of anti-retroviral therapy. (20 marks)

4.4. Describe the nutrition support needed for patients with HIV/AIDS. (50 marks)

5.

5.1. Describe three (03) key differences between monitoring and evaluation.
(15 marks)

5.2.

    5.2.1. Name one (01) indicator each to assess a project to improve the nutritional status of school children in a district in relation to the following:

        (a)   Monitoring        (05marks)

        (b)   Evaluation        (05 marks)

    5.2.2. Describe the usefulness of each indicator you mentioned in 5.2.1.
(20 marks)

5.3. You have been asked to implement a nutrition education programme for a low-income urban school, with a significant percentage of overweight students, targeting the Ordinary Level grades.

    5.3.1. List five (05) points to consider in situation analysis to develop the programme.    (10 marks)

    5.3.2. Give one (01) key objective to be achieved in a short term period of 3 months.    (05 marks)

    5.3.3. Briefly describe five (05) realistic activities you could do to achieve this objective in 3 months.    (30 marks)

    5.3.4. Name two (02) indicators you would use to monitor the progress of this programme within these 3 months.    (10 marks)

6.

6.1. A researcher compared vitamin D supplementation status among 100 persons who died due to COVID-19 with 100 persons who recovered from the disease. Results showed that 50 persons among those who died, and 80 persons among those recovered were supplemented with vitamin D.

    6.1.1. State the null hypothesis and alternate hypothesis.    (10 marks)

    6.1.2. Summarise results in a table.    (20 marks)

    6.1.3. Calculate the risk estimate and interpret results.    (20 marks)

6.2. A researcher plans a study to determine the prevalence of sarcopenia among the elderly in a district.

    6.2.1. What is the appropriate study design?    (10 marks)

    6.2.2. Outline the basic steps in sampling.    (30 marks)

    6.2.3. What are the key ethical considerations?    (10 marks)