NUT2601

October/November 2016

NUTRITIONAL CARE

Duration   2 Hours

100 Marks

EXAMINERS
FIRST   MS CJ PEREIRA
SECOND   MR F RAMASUNGA

Use of a non-programmable pocket calculator is permissible

Closed book examination

This examination question paper remains the property of the University of South Africa and may not be removed from the examination venue

This examination question paper consists of five (5) pages

Answer ALL the questions in the answer book provided

Start **each question** on a **new page**, that is, QUESTION 1, QUESTION 2, QUESTION 3 and QUESTION 4 should each start on a new page in the answer book provided

Where applicable, give all answers using the metric system or SI units No marks will be awarded for answers with non-metric units of measurement

QUESTION 1 [34]

1 1 When food is consumed, various factors can influence the amount of food that a person will eat List 4 (four) factors that influence hunger (4)

1 2 The following list shows the path that food follows through the GIT
Complete the missing sections of the GIT (excluding the sphincters)
Mouth → Pharynx → __A__→ Stomach → __B__ (= Duodenum + __C__ + Ileum) → __D__ (= Ascending colon + __E__ + Descending colon) → __F__ → Anus (6)

1 3 Answer the following questions regarding fat, carbohydrate and protein digestion

1 3 1 The main digestive site of lipids is in the small intestine Describe the digestion of fats in the small intestine, and make sure to mention the organs that secrete the digestive enzymes, the specific digestive enzyme that is secreted and the end-products of digestion that are formed (11)

1 3 2 Shortly discuss the role of HCl (hydrochloric acid) in protein digestion (3)

1 3 3 Describe what is meant by the terms protein turnover and nitrogen balance? (4)

1 3.4 The main site for carbohydrate digestion is in the small intestine, but a small amount of carbohydrate digestion already takes place in the mouth Describe what carbohydrate digestion takes place in the mouth (name the enzyme involved, where it is secreted and the actions that take place) (3)

1 3 5 Name the part of starches that is not digested, explain what happens to some of the undigested starches in the large intestine and name the products that are formed (3)

QUESTION 2 [24]

2.1 You are asked to do an anthropometric assessment of Mrs Steyn and this reveals that she has a height of 1 69m, weighs 97kg and her waist circumference is 96cm She also has hypertension

Answer the following questions

2 1 1 Calculate and interpret Mrs Steyn's body mass index (BMI) (2)

2.1 2 Interpret Mrs Steyn's waist circumference, explain why you can use the waist circumference measurement in Mrs Steyn's case and explain why you would want to measure waist circumference in someone who is overweight or obese (2)

[TURN OVER]

2 1 3 Mrs Steyn tells that you that she would like to lose more than 10 kg in the next month because she is seeing her mother in one month's time and her mother always tells her that she is worried about her weight and her health Calculate the % weight loss that would result from Mrs Steyn losing 10kg Describe whether the % weight loss would be appropriate for one month   (3)

2 1 4 Calculate a realistic weight loss goal for one month for Mrs Steyn and provide her with an explanation for the weight loss goal that you have calculated   (3)

2 2 You take a diet history from Mrs Steyn and this shows that her diet is currently providing 9220kJ and is made up of 379g carbohydrates, 65g protein and 44g fat Answer the following questions

2 2 1 Calculate the energy distribution of Mr De Vos's diet and show all calculations   (6 X ½ = 3)

2 2 2 Based on your answer from question 1 4 1, interpret the macronutrient distribution by comparing each nutrient's energy distribution to the Acceptable Macronutrient Distribution Ranges (AMDR) and then make recommendations to Mrs Steyn accordingly   (6)

2 3 Answer the following questions about Mrs Steyn's dietary intake

2 3 1 In order to obtain Mrs Steyn's dietary intake information, you took a 24-hour recall from her List 2 (two) other methods of obtaining food intake data that you could have used in order to obtain information regarding what Mrs Steyn was consuming   (2)

2 3 2 You note from Mrs Steyn's diet history that she consumes foods high in salt on a regular basis High salt intake has been associated with an increased risk of developing hypertension and will worsen her current diagnosis of hypertension Give Mrs Steyn six practical tips/suggestions for daily dietary changes to help her reduce her salt intake (6 x ½ = 3)

QUESTION 3   **[28]**

Mr Mthimunye is a 42-year-old male He is a construction worker, and is physically active in the day so often gets hungry He weighs 106kg and his height is 1 74m He has recently been diagnosed with diabetes mellitus Study the 24-hour recall conducted This diet history is representative of a typical day for Mr Mthimunye Answer the following questions

Time	Amount	Food	Preparation
Breakfast	2 cups	Mieliepap/ Maize meal porridge	Cooked
	1 cup	Full cream milk	
	3 tsp	Sugar over porridge	

	1 cup	Coffee	
	3 tsp	Sugar in coffee	
	3 tsp	Cremora in coffee	
Midmorning	1 cup	Coffee	
	3 tsp	Sugar in coffee	
	3 tsp	Cremora in coffee	
Lunch	6 slices	White bread	
	3 tbs	Hard block margarine on bread	
	3 tbs	Apricot Jam on bread	
	90g	Cheddar cheese	
	340 ml	Fanta	
Mid afternoon	1 packet (40g)	Simba Chips	
Supper	180g	Hake with the skin	Fried
	100g	Potato	Baked
	1½ cup	Soft mieliepap/maize meal porridge	Cooked
	½ cup	Tomato and onion gravy over mieliepap/ maize meal porridge	Cooked
	1 tbs	Sunflower oil used to fry the fish	
	2 tbs	Mayonnaise (dressing for the potato)	
	1 cup	Oros, mixed with water	
Late night snack	1 cup	Coffee	
	3 tsp	Sugar in coffee	
	3 tsp	Cremora in coffee	
	4	Biscuits	

3 1 Use the following two food-based dietary guidelines to explain the difference between various types of carbohydrates found in food Explain to Mr Mthimunye what changes you would recommend to his eating patterns that would be better to manage his blood glucose levels 'Make starchy food part of most meals' and 'Use sugar and food and drinks high in sugar sparingly' (8)

3 2 Explain to Mr Mthimunye why it is beneficial for his health to include more fibre in his diet (3)

3 3 You notice that Mr Mthimunye is not consuming any legumes

3.3 1 Describe the food-based dietary guideline that mentions legumes and explain to Mr Mthimunye the benefits in terms of the management of diabetes mellitus, of including dried beans and soy foods into his diet (3)

3 3 2 Provide some practical suggestions of how Mr Mthimunye could include legumes into his diet, based on her current eating patterns (3)

3 4 Mr Mthimunye asks you about what types of fat he can eat, because he has heard of the Banting diet, where you can eat any type of fat that you like and they say it is good for people with diabetes Using the food-based dietary guideline that mentions fat, explain to

[TURN OVER]

Mr Mthimunye what you would recommend with regard to fat intake and the types of fat that he
should be consuming   (6)

3 5 You teach Mr Mthimunye about the 'exchange system' as a way to manage his intake and he
has been following your recommendations At lunch time Mr Mthimunye is having a sandwich
with 2 slices of whole-wheat bread, margarine and peanut butter together with one medium
sized apple Complete the following table in order to determine the macronutrient and energy
content of what he is consuming Make sure to fill in the grey blocks   (10 X ½ = 5)

Food	Size	Exchanges	CHO (g)	Prot (g)	Fat (g)	Energy (kJ)
2 slices whole-wheat bread	60g	2			-	
Margarine	5g		-	-	5	
Peanut butter	2 tsp	1		-	5	
Apple	medium			-	-	

QUESTION 4   [14]

4 1   The Dietary Reference Intakes (DRIs) contain four reference values Write out the
       abbreviation of and explain the difference between the following 2 DRIs EAR and the AI   (4)

4 2   Indicate whether the following statements are true or false For each answer of **"false"**, you
       need to explain **why** the statement is incorrect   (7)

4 2 1 The DRIs consist of four reference values, one being Recommended Daily Allowance
       (RDA)

4 2 2 The DRIs constitute a professional tool that, if used appropriately, can evaluate and
       interpret the adequacy of diets for studies among people with nutrition-related diseases
       such as type II diabetes.

4 2 3 DRIs are too complex for direct use by the consumer

4 2 4 DRIs are a good tool to use when evaluating an individual's nutritional status

4 3   What nutritional information is provided in food composition tables?   (6 X ½ = 3)

TOTAL: 100 MARKS