

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

DEPARTMENT OF GENERAL NURSING SCIENCE

MAIN EXAMINATION - DECEMBER, 2014

TITLE OF PAPER : NUTRITION AND DIETETICS
COURSE CODE : GNS 210
MARKS ALLOCATED : 75
TIME ALLOWED : TWO (2) HOURS

Number of pages including cover page: 11

INSTRUCTIONS

1. Read questions carefully
2. Answer all questions
3. Write legibly
4. Each **explained** fact is worth 1 mark unless indicated otherwise

**DO NOT OPEN UNTIL PERMISSION HAS BEEN GRANTED BY THE
INVIGILATOR**

SECTION A

Choose the most appropriate answer; e.g. 1. D

1. Which one of the following can leach calcium from bones when consumed in excess?
 - A. Carbohydrates
 - B. Protein
 - C. Trans fat
 - D. Saturated fat

2. Which of the following nutritional factors has been shown to BEST predict long term morbidity and/or mortality?
 - A. Total fat intake >30% of consumed calories
 - B. >10% weight gain in the previous 6 months
 - C. BMI >30 kg/m² or <18kg/m²
 - D. Total protein intake <40% of consumed calories

3. Which one of the following groups of nutrients do products in the dairy group primarily provide?
 - A. Calcium, potassium, Vitamin D
 - B. Dietary fiber, Vitamin A, Vitamin E
 - C. Folate, dietary fiber, Vitamin C
 - D. Protein, B vitamins, iron

4. When treating a patient who has been diagnosed with milk allergy, which one of the following should be done first?
 - A. Prescribe only fat-free dairy products
 - B. Try small amounts of lactose-containing foods, and gradually increase them.
 - C. Eliminate all dairy products from the patient's diet, and add a calcium supplement.
 - D. Ensure that the patient consumes dairy foods separately from other foods.

5. The action of enzymes is influenced by:

- A. Presence of co-factors and co-enzymes
- B. Chemical surroundings
- C. Both A and B
- D. None of the above

6. One weekend you decide to go and eat breakfast with your friends at the newly built Corporate Place, Swazi Plaza-Mbabane. You then order a breakfast made of buttered toast, cream and eggs. Which one of the following would you NOT expect to happen?

- A. Gastric motility to increase while you are chewing the food.
- B. An increase of gastric motility and secretion of hydrochloric acid when food reaches the duodenum.
- C. Fats to be emulsified in the duodenum by the action of bile.
- D. A decrease of gastric motility and secretion of hydrochloric acid when food reaches the duodenum

7. The essential fatty acids that must be derived from the diet are:

- A. Stearidonic acid and eicosatetraenoic acid
- B. Eicosapentaenoic acid and docosapentaenoic acid
- C. Linoleic and alpha-linoleic acid
- D. Gamma-linoleic acid and arachidonic acid

8. Consuming fewer than 130 grams of carbohydrate per day may lead to:

- A. Hypoglycemia
- B. Kwashiorkor
- C. Marasmus
- D. Ketosis

9. Characteristics of successful dieters include all of the following EXCEPT:

- A. Maintaining a daily food journal
- B. Counting calories
- C. Adhering to a strict eating plan
- D. Eliminating all carbohydrates from their diets

10. Non-digestible food ingredients that stimulate the growth and activity of certain bacteria in the colon are called:

- A. Insoluble fiber
- B. Probiotics
- C. Prebiotics
- D. Cellulose

11. A deficiency of thiamine (vitamin B₁) in the diet causes:

- A. Osteopenia
- B. Beri-beri
- C. Protein malnutrition
- D. Scurvy

12. All of the following are potentially modifiable risk factors for osteoporosis EXCEPT:

- A. Anorexia nervosa
- B. Chronically low intake of calcium and vitamin D
- C. Chronically low intake of vitamins C and B₆
- D. Excessive alcohol consumption

13. Which one of the following statements about vitamin B₃ (niacin) is NOT true?

- A. It helps to release energy in carbohydrates, fat, and protein
- B. It improves blood lipid levels
- C. Its deficiency causes beriberi
- D. It is involved in the synthesis of sex hormones

14. Products that contain live micro-organisms in sufficient numbers to alter intestinal micro flora and promote intestinal microbial balance are known as:
- A. Antibiotics
 - B. Probiotics
 - C. Prebiotics
 - D. Digestive enzymes
15. All of the following statements about omega-3 fatty acids are true, EXCEPT:
- A. They help to maintain healthy triglyceride and high-density lipoprotein
 - B. They have significantly contributed to the obesity epidemic
 - C. They are necessary for healthy infant growth and development
 - D. They play an important role in the production of hormones that govern numerous metabolic and biological processes
16. Parenteral nutrition differs from enteral nutrition in that:
- A. Parenteral nutrition can be given through the digestive system
 - B. Either type of nutrition can be given through an IV
 - C. Parenteral nutrition by-passes the digestive system
 - D. Enteral nutrition by-passes the digestive system
17. A patient receiving parenteral nutrition may have it administered via the following routes EXCEPT:
- A. Peripherally inserted central catheter line
 - B. Peg tube
 - C. Subclavian line
 - D. Central Venous Catheter

18. When preparing to change a right subclavian vein Total Parenteral Nutrition (TPN) bag and tubing, the patient's instruction must include:
- A. Inhale deeply, hold it, and bear down
 - B. Breathe normally
 - C. Exhale slowly and hold it
 - D. Turning the head to the left
19. Which one of the following is not a use of nutritional assessment?
- A. Identify malnourished patients
 - B. To provide data to serve as basis for planning nutritional support
 - C. Identify patients that are not at risk of becoming malnourished
 - D. To provide information for evaluation of the effectiveness of nutritional support
20. Which of the following measures DO NOT HELP to prevent diabetes mellitus complications?
- A. Controlling blood glucose
 - B. Controlling blood pressure and blood lipids
 - C. Eliminating all carbohydrates from the diet
 - D. Prompt detection of diabetic eye and kidney disease
21. Your uncle recently suffered a myocardial infarction. Your uncle heard you saying you study nutrition and you learnt that antioxidants are good for preventing heart disease and asks your opinion. Which of the following statements is CORRECT?
- A. Antioxidants may act by preventing molecules known as 'free radicals' from attacking and damaging healthy cells
 - B. Vitamin E is recommended for anyone who has heart disease or is at risk of developing it
 - C. Antioxidants include Vitamin A, Vitamin D, beta carotene and flavonoids
 - D. Antioxidants are present in green leaf tea and green leafy vegetables but not in black leaf tea.

22. Nonhle asks your advice regarding a healthy intake of fruit and vegetables.

Which of the following statements is CORRECT?

- A. Rice is considered a vegetable and may be included in the daily requirements
- B. 5 serves of fruit and vegetables should be consumed each day
- C. Fruits and vegetables are a good source of protein an essential nutrient
- D. Frozen or canned vegetables are an acceptable source of daily vegetable intake.

23. Mumu's father, Samsung, aged 69 years, lives alone since his wife died 3 years ago. He presents with a vague unwell feeling at you clinic. He is receiving treatment for mild hypertension, chronic glaucoma and appears to have lost weight. Which is the MOST helpful screening question for assessing Samsung's current nutritional status?

- A. Are you taking any nutritional supplements such as multivitamins?
- B. Have you noticed any decrease in your appetite recently?
- C. Have you been eating more 'take away' meals than you used to?
- D. Have you been drinking at least 8 cups of fluid per day?

24. Mrs. Jose's BMI is 28 kg/m^2 (5 kg gained last 12 months); BP is normal. She is a nonsmoker with no past or family chronic heart disease (CHD) history; eats 1 piece of fruit and two vegetables & drinks 4 cups of coffee and 2 glasses of water most days. Which initial assessment is CORRECT?

- A. Mrs. Jose is at risk nutritionally because she has gained 5 kg in the past months
- B. Mrs. Jose does not need investigations at this stage because her risk for CHD is low
- C. Mrs. Jose's 6 cup fluid intake (including 2 cups of water) per day is adequate
- D. Mrs. Jose's vital signs should be obtained

25. All of the following may be associated with scurvy EXCEPT:

- A. Loss of appetite and irritability
- B. Diarrhea and fever
- C. Tenderness and swelling in legs
- D. Altered mental status

[Total marks= 25]

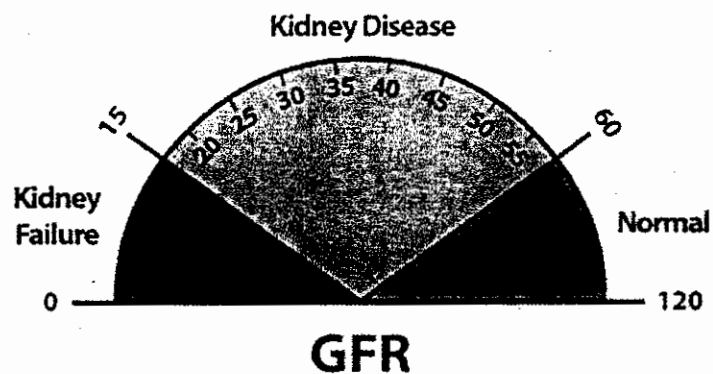
SECTION B: Short essay questions

Question1

Read the following scenario and answer the questions that follow.

Busi, aged 27 years, comes to you at the Public Health Unit for a routine visit for her first antenatal appointment. Lifestyle history reveals that Busi is a nonsmoker; has now stopped drinking; and gets plenty of physical activity as she works part time as an aerobics instructor. There has been no weight change yet, or over the past year. Busi consents to nutritional assessment.

- A. What information would you ascertain from Busi during nutritional assessment? State the rationale for the information. (5 marks)
- B. Following your nutritional assessment with Busi, she reports that she is eating 1 fruit per day, eating 2–3 vegetables and avoids folate supplementation. What general nutritional advice would you give Busi? Rationalise your advice. (3 marks)
- C. What extra advice would you give Busi since she is pregnant? (5 marks)
- D. You then arrange a follow up appointment for Busi. You decide that her nutritional status can be reviewed at her next antenatal visit. At the next antenatal visit Busi has increased her fruit and vegetable intake, her pregnancy is progressing well and all tests are normal. What other nutritional issues would you discuss before Busi's baby is born? (5 marks)



A. Answer the following questions referring to the given scenario.

- i) Describe five factors that are likely to cause pre-diabetes, hypertension, and chronic kidney disease (CKD) in Ms. Sacolo's life. (5 marks)

- ii) Assuming you the Nutrition Counsellor discuss three (3) main strategies that may be beneficial to Ms. Sacolo in slowing the progression of CKD. (6 marks)

- iii) Comment about the practitioner's intervention. (1 marks)

- iv) One of the common complications in CKD is malnutrition. Discuss one parameter that may be useful in determining malnutrition in CKD. (3 marks)

B. Explain how clinical manifestations occur in Kwashiorkor. (5 marks)

C. Explain the relationship between energy intake and body mass index (BMI) of an individual.

(5 marks)

[Total marks= 25]