



AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF REHABILITATIVE MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY
END OF TRIMESTER EXAMINATIONS JAN APRIL 2025

UNIT CODE: PHT 234

UNIT NAME: PRINCIPLES OF NUTRITION

DATE: 14th April 2025 TIME: 2HOURS

TIME: 11.15am-1.15pm

INSTRUCTIONS

1. All students will have two (2) hours to complete the examination
2. Attempt all questions as per the instruction
3. It is the student's responsibility to report any page and number missing in this paper.
4. Check that the paper is complete
5. Total number of pages is 10 including the cover.
6. Read through the paper quickly before you start.
7. No phones or any form of written material are allowed in the examination room

SECTION A: MCQ ANSWER ALL QUESTIONS – 30 MARKS

1. Which of the following statement is not true?

- A. Adults should have not more than 30g of free sugars a day, (roughly equivalent to 7 sugar cubes).
- B. Adolescents should have more than 60g of free sugars a day, (roughly equivalent to 14 sugar cubes).
- C. Children aged 7 to 10 should have not more than 24g of free sugars a day (6 sugar cubes).
- D. Children aged 4 to 6 should have not more than 19g of free sugars a day (5 sugar cubes).

2. Which of the following statements is true?

- A. Unsaturated fats are considered healthier fats. They are usually solid at room temperature and are found in plant based oils, such as olive oil, canola oil, and soybean oil.
- B. Unsaturated fats are considered non - healthier fats. They are usually liquid at room temperature and are found in plant based oils, such as olive oil, canola oil, and soybean oil.
- C. Unsaturated fats: They are considered healthier fats. They are usually liquid at room temperature and are found in plant based oils, such as olive oil, canola oil, and soybean oil.
- D. Unsaturated fats: They are considered healthier fats. They are usually both solid and liquid at room temperature and are found in plant based oils, such as olive oil, canola oil, and soybean oil.

3. The person with the highest RDA (g/kg) is

- A. An infant
- B. An adult
- C. An adolescent
- D. A geriatric

4. Beriberi disease is caused by deficiency of vitamin.....?

- A. Vitamin B
- B. Vitamin B3
- C. Vitamin B1
- D. Vitamin B2

5. Which of the following is the main purpose of carbohydrates in the body?

- A. They repair cells and aid in digestion
- B. They help regulate hormones and
- C. They help maintain body temperature
- D. They are the main sources of energy

6. Alma is finding it difficult reading the blackboard, her doctor recommends that she consumes food rich in?

- A. Vitamin A
- B. Potassium
- C. Carbohydrates
- D. Omega 3

7. Long periods of parenteral nutrition is not recommended because _____

- A. it increases the toxicity of blood
- B. it puts pressure on the kidney
- C. it puts pressure on the heart
- D. it causes the GI track to degenerate

8. In cases of muscle fatigue, which of the following Vitamin should be taken?

- A. A
- B. D
- C. E
- D. K

9. What is the primary function of sodium in the body?

- A. Muscle contraction
- B. Blood clotting
- C. Fluid balance
- D. Enzyme function

10. Which of the following is NOT a trace mineral?

- A. Manganese
- B. Potassium
- C. Copper
- D. Selenium

11. Deficiency of which mineral can lead to anemia?

- A. Calcium
- B. Iron
- C. Sodium
- D. Zinc

12. What is the primary role of zinc in the body?

- A. Immune function
- B. Blood clotting
- C. Bone health
- D. Nerve transmission

13. Which of these minerals is essential for thyroid hormone production?

- A. Magnesium
- B. Iodine
- C. Copper
- D. Manganese

14. Which mineral is vital for red blood cell production?

- A. Zinc
- B. Iron
- C. Selenium
- D. Fluoride

15. Deficiency in this mineral causes stunted growth in children and osteoporosis in adults

- A. Magnesium
- B. Calcium
- C. Chloride
- D. Phosphorous

16. How can Protein Energy Malnutrition be treated?

- A. Oral feeding & Avoiding lactose
- B. Supportive care & Reduction in poverty
- C. Improving nutritional education and public health measures
- D. All of the above

17. The total number of essential vitamins required for the proper functioning of the human body is _____.

- A. 12
- B. 13
- C. 15
- D. 22

18. Which of the following vitamins cannot be produced by our body?

- A. Vitamin A
- B. Vitamin K
- C. Vitamin C
- D. All the above

19. Nicole challenged her friends that one special vitamin would not be affected when she boils milk. Which vitamin is it?

- A. Vitamin C
- B. Vitamin D
- C. Vitamin B
- D. None of the mentioned

20. Hazards affecting food are _____

- A. Chemical, Biological, Physical
- B. Additives, Colour
- C. Pollutants
- D. All of the mentioned

21. Jonah is suffering from high blood pressure which of the following should he cut down on _____

- A. Sodium
- B. Potassium
- C. Calcium
- D. Magnesium

22. Your body needs vitamins and minerals because

- A. They give the body more energy
- B. They help to carry out metabolic reactions
- C. They insulate the body organs
- D. They prevent nutrition loss

23. Which of the following minerals functions by building strong bones and teeth?

- A. Iron
- B. Calcium
- C. Iodine
- D. None of the above

24. Which vitamin when taken in large amounts harms the bones

- A. Vitamin A
- B. Vitamin C
- C. Vitamin K
- D. Vitamin B

25. A person with high blood pressure should reduce intake of?

- A. Sodium
- B. Potassium
- C. Magnesium
- D. Calcium

26. When food is directly given in the stomach it is called nutrition

- A. Parenteral
- B. Enteral
- C. Intravenous
- D. Saline

27. When food is directly given in the veins it is called nutrition

- A. Parenteral
- B. Enteral
- C. Intravenous
- D. Saline

28. To overcome diabetes a person can increase intake of and reduce intake of

- A. Carbohydrates, proteins
- B. Proteins, Fats
- C. Fats, Carbohydrates
- D. Carbohydrates, proteins

29. Fat soluble vitamins include

- A. Vitamin D
- B. Vitamin B complex
- C. Vitamin C
- D. Vitamin A

30. Milk is deficient in which of the following vitamin

- A. Vitamin D
- B. Vitamin B complex
- C. Vitamin C
- D. Vitamin A

PART B: ANSWER ALL QUESTIONS - 10 MARKS

1. Each gram of fat you consume provides more than twice as many calories as a gram of protein or carbohydrate. Saidi a 30year old male client who works as a mechanic has consumed 132 grams of protein, 148grams of carbohydrates and 176 grams of fat.

- i) Calculate the total number of calories that Saidi consumed – (2 Marks)
- ii) Based on your calculation, has Saidi achieved his RDA? Explain your answer (2 Marks)
- iii) What is the required RDA for Saidi? (1 Mark)

2. Distinguish between the following key terminologies (2 Marks)

- i. Glycemic Index and blood sugar
- ii. Triglycerides and Trans Fat

3. Nutritional deficiencies in young children can cause various symptoms briefly explain how learning and sleep problems occur as a result of nutritional deficiencies (3 Marks)

PART C: PICK YOUR BEST THREE QUESTIONS – EACH QUESTION CARRIES 10 MARKS

1a). What do you understand by the term Safety Margin? (2 mark)

1b). Refeeding syndrome can manifest in a variety of ways leading to various forms of acute deficiencies. Discuss the following using relevant examples (8 marks)

- i. Phosphate deficiency
- ii. Magnesium deficiency
- iii. Potassium deficiency
- iv. Thiamine deficiency

2a) In your own view what is an adequate diet? (2 Marks)

2b) Explain to a group of parents with newborns four benefits of proper nutrition using relevant examples (8 Marks)

3. You have been invited to speak to AMIU community health workers on malnutrition, explain to them the following (10 Marks)

- i. The two types of malnutrition
- ii. What happens to the body during undernutrition?
- iii. How is malnutrition diagnosed?
- iv. Causes and treatment of malnutrition

4a) Water is critical for life's basic processes, total water intake and output is supremely important. Describe in detail the benefits of water to our bodies. (6marks)

4b) Discuss how sedentary lifestyle and poverty are risk factors for malnutrition (4marks)