



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR
SECOND YEAR SECOND TRIMESTER**

**SCHOOL OF PURE, APPLIED AND HEALTH
SCIENCES
DIPLOMA IN FOOD, NUTRITION AND DIETETICS**

**COURSE CODE: DND 2205
COURSE TITLE: NUTRITION AND BEHAVIORAL
SCIENCES**

DATE: 24TH APRIL 2024

TIME: 0830-1030 HRS

INSTRUCTION TO CANDIDATES

Section A: Multiple Choice Questions. Answer ALL Questions

Section B: Short Answer Questions. Answer ALL Questions

Section C: Long Answer Questions. Answer Question ONE and any other ONE question.

This paper consists of 6 printed pages. Please turn over.

SECTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS) SELECT THE CORRECT ANSWER.

- 1) Reported behavioural symptoms of marasmus
 - A. Anorexia and withdrawal
 - B. Irritability and apathy
 - C. Lethargy and reduced activity
 - D. Whimpering and monotonous cry
- 2) What is the behavioral pattern known as when individuals repeatedly lose weight through dieting, only to regain it shortly afterwards?
 - A. Weight fluctuation
 - B. Binge eating
 - C. Yo-yo dieting
 - D. Rapid cycling
- 3) Which of the following factors contributes to the prevalence of pellagra in populations heavily relying on maize as a staple food?
 - A. High vitamin B3 content in maize
 - B. Low bioavailability of niacin in maize
 - C. Effective utilization of bound nicotinic acid in maize
 - D. Limited access to maize-based diets
- 4) The statement that best describes the interdisciplinary nature of nutrition and behavior:
 - A. It solely relies on psychological theories.
 - B. It excludes anthropological research.
 - C. It borrows information from various disciplines.
 - D. It focuses only on biological determinants.
- 5) Why is a control group important in experimental nutrition-behavior studies?
 - A. To ensure the subjects are randomly assigned
 - B. To provide a standard for comparisons and eliminate alternative explanations
 - C. To guarantee a placebo effect
 - D. To implement double-blind conditions
- 6) What condition ensures that neither the individuals collecting data nor the subjects know whether the treatment or placebo is administered?
 - A. Random assignment
 - B. Placebo effect
 - C. Double-blind conditions

- D. Correlational design
- 7) In an experimental study, what is manipulated to determine its effect on the dependent variable?
- A. Independent variable
 - B. Correlational coefficient
 - C. Placebo effect
 - D. Dependent variable
- 8) Which nutrient deficiency during the perinatal period can lead to neural tube anomalies like spina bifida?
- A. Vitamin C
 - B. Folic acid
 - C. Iron
 - D. Calcium
- 9) Which of the following diseases can cause a buildup of the amino-acid phenylalanine in the blood, leading to brain damage and mental defects?
- A. Phenylketonuria (PKU)
 - B. Diabetes
 - C. Hypertension
 - D. Hyperthyroidism
- 10) What are linoleic acid and alpha-linolenic acid termed, as they cannot be synthesized and must be obtained from the diet?
- A. Essential fatty acids (EFAs)
 - B. Saturated fatty acids
 - C. Monounsaturated fatty acids
 - D. Trans fatty acids
- 11) Which behavioral disturbance is associated with iron deficiency in school-going children?
- A. Visual disturbances
 - B. Memory loss
 - C. Irritability
 - D. Hoarseness of voice
- 12) The potential long-term effect of severe malnutrition before three years of age on IQ is:
- A. Increased IQ scores
 - B. Unaffected IQ
 - C. Low IQ (below 70)

- D. Improved parenting
- 13) Which of the following nutrients accounts for over half the dry weight of the brain and is crucial for constructing neuronal membranes during brain development?
- A. Proteins
 - B. Carbohydrates
 - C. Fats (Lipids)
 - D. Vitamins
- 14) What anomalies can result from nutrient inadequacy affecting the closure of the neural tube during development?
- A. Autism and ADHD
 - B. Anencephaly and spina bifida
 - C. Parkinson's disease and Alzheimer's disease
 - D. Epilepsy and schizophrenia
- 15) Which of the following is a rich source of docosahexaenoic acid (DHA), a major brain PUFA?
- A. Vegetable oils
 - B. Fish oils
 - C. Egg lipids
 - D. Algae
- 16) Why might a person who consumes large amounts of alcohol still face nutrient deficiencies?
- A. Alcohol increases nutrient absorption
 - B. Alcohol promotes the synthesis of vitamins
 - C. Alcohol interferes with nutrient absorption and utilization
 - D. Alcohol enhances nutrient storage in the body
- 17) Which of the following vitamins is an essential component of co-enzyme nicotinamide adenine dinucleotide (NAD)?
- A. Vitamin A
 - B. Vitamin B3 (Niacin)
 - C. Vitamin B6
 - D. Vitamin K
- 18) Which vitamin deficiency can lead to Wernicke-Korsakoff syndrome, characterized by neurological and psychological deficits in alcoholics?
- A. Thiamine (B1)
 - B. Riboflavin (B2)

- C. Niacin (B3)
 - D. Pyridoxine (B6)
- 19) What BMI range is considered normal or healthy weight in adults?
- A. Below 18.5 kg/m²
 - B. 18.5 to 24.9 kg/m²
 - C. 25 to 29.9 kg/m²
 - D. 30 or higher kg/m²
- 20) Which form of PEM is characterized by the absence of edema?
- A. Marasmus
 - B. Kwashiorkor
 - C. Marasmic kwashiorkor
 - D. Iatrogenic PEM

SECTION B: SHORT ANSWER QUESTIONS (40 MARKS). ANSWER ALL QUESTIONS.

- 1) Enumerate six traits commonly exhibited by nutrition quacks in Kenya(6 Marks)
- 2) Discuss three ethical principles that must be observed in studies focusing on nutrition behaviors. (6 Marks)
- 3) State five disorders that can result from alcohol consumption during pregnancy (5 Marks)
- 4) Explain three factors that directly influence how alcohol affects a person's brain function (6 Marks)
- 5) Describe three key factors that influence food choice behavior (6 Marks)
- 6) Explain three elements of sound experimental nutrition-behavior studies (6 Marks)
- 7) State five populations groups that are identified as particularly susceptible to quackery (5 Marks)

SECTION C: LONG ANSWER QUESTIONS (40 MARKS).QUESTION ONE IS COMPULSORY, THEN CHOOSE EITHER QUESTION 2 OR 3.

- 1) Sarah, a 17-year-old high school student, has recently been exhibiting concerning behaviors related to her eating habits. She refuses to eat with her family, often citing that she has already eaten or is not hungry. Despite her thin appearance, she constantly talks about feeling overweight and expresses a fear of gaining weight. Sarah's friends have noticed that she frequently checks her appearance in

reflective surfaces and avoids social gatherings that involve food. Additionally, she has been experiencing hair loss and complains of feeling cold all the time, even in warm weather.

- a) Based on the information provided, what eating disorder is Sarah most likely to be suffering from? **(2 Marks)**
 - b) Describe the diagnostic criteria of the above eating disorder **(6 Marks)**
 - c) Discuss three physiological characteristics associated with this disorder **(6 Marks)**
 - d) State six clinical features associated with the above disorder **(6 Marks)**
- 2) Samantha, a 34-year-old woman, has been experiencing episodes of compulsive overeating for the past six months. She frequently consumes large amounts of food uncontrollably, even when she is already full. Samantha feels ashamed and embarrassed about her eating habits but finds herself unable to stop. She often eats in secret and experiences feelings of stress and anxiety that she tries to alleviate by eating. Samantha is also struggling with depression and low self-esteem.
- a) Based on Samantha's symptoms, what eating disorder is she likely experiencing? **(2 Marks)**
 - b) Discuss three potential causes of this disorder **(6 Marks)**
 - c) Outline six behavioral and emotional signs and symptoms of this disorder **(6 Marks)**
 - d) State six complications or consequences associated with this disorder. **(6 Marks)**
- 3) John, a 35-year-old individual with severe obesity, is contemplating weight loss surgery.
- a) Explain to him the following types of surgery
 - i. Gastric bypass surgery **(2 Marks)**
 - ii. Intra-gastric balloon approach **(2 Marks)**
 - iii. Jejunioileal bypass **(2 Marks)**
 - b) State four desirable attributes of an ideal anti-obesity medication **(4 Marks)**
 - c) Enumerate six strategies aimed at controlling excessive weight gain at an individual level **(6 Marks)**
 - d) Explain the significance of fat distribution in the body as a risk factor for various diseases.

(4 marks)END//