THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
ADVANCED CERTIFICATE OF SECONDARY EDUCATTION EXAMINATION

155/2 **FOOD AND HUMAN NUTRITION 2**

(For Both School and Private Candidates)

Time: 3 Hours **ANSWERS** **Year: 2024**

Instructions

1. This paper consists of sections **A** and **B**.
2. Answer **all** questions in section **A** and only **Three (3)** questions from section **B**.
3. Cellular phones and any unauthorised materials are **not** allowed in the examination room.
4. Write your **examination Number** on every page of your answer booklet(s).

1. (a) What are the objectives of Food and Nutrition Policy for Tanzania? Give seven points.

The first objective is to improve the nutritional status of all Tanzanians by ensuring that the population has access to adequate and nutritious food for maintaining health and productive lives.

The second objective is to reduce the prevalence of malnutrition, particularly among vulnerable groups such as children under five, pregnant women, lactating mothers, the elderly, and people with chronic illnesses.

The third objective is to enhance nutrition education and awareness at both community and national levels to promote good dietary practices and health habits.

The fourth objective is to strengthen food security at the household, community, and national levels by improving food production, distribution, and consumption patterns.

The fifth objective is to encourage the prevention and control of diet-related diseases such as diabetes, hypertension, and cardiovascular illnesses through improved dietary habits.

The sixth objective is to promote multi-sectoral collaboration among various government ministries, non-governmental organizations, and communities in addressing food and nutrition problems.

The seventh objective is to ensure food quality and safety by establishing effective systems for food inspection, control, and enforcement of hygiene standards in food production and handling.

(b) The Ministry of Trade and Industry have great roles to play in making the Food and Nutrition Policy for Tanzania a success. Argue for this statement by giving three points.

The first role is to ensure the availability and affordability of quality food products in markets by regulating food industries and promoting the production of diverse and nutritious food products.

The second role is to enforce food safety and quality standards in the manufacturing, processing, and distribution of food products to protect consumers from contaminated and substandard foods.

The third role is to promote food fortification programs and encourage local industries to produce fortified food products that can address common micronutrient deficiencies in the population.

2. Mr. Robertson who is a food processing manager failed to use temperature to control microbial growth due to lack of knowledge on their growth temperature ranges. Using the knowledge, you have in growth and survival of microorganisms in foods, assist him to effectively produce safe foods by:
(a) Classifying microorganisms basing on the temperature ranges at which they can grow.

Psychrophiles are microorganisms that grow best at very low temperatures ranging from -5°C to 20°C, commonly found in refrigerated or frozen foods.

Mesophiles are microorganisms that grow optimally at moderate temperatures ranging between 20°C and 45°C, including most bacteria that cause food spoilage and human diseases.

Thermophiles are microorganisms that thrive at high temperatures between 45°C and 70°C, often found in hot environments and spoiled canned foods.

Hyperthermophiles grow at extremely high temperatures of 70°C to 110°C and are mostly found in natural hot springs and geothermal environments, with rare presence in food.

(b) Stating what will happen to the microorganisms if the food product in which they are found is kept:
(i) Below their minimum growth temperature.

When food is kept below the minimum growth temperature of microorganisms, their growth and multiplication will be significantly slowed down or completely stopped, though some might survive in dormant form without multiplying.

(ii) Above their maximum growth temperature.

If the food is kept above the maximum growth temperature of microorganisms, their cellular structures and enzymes are denatured, leading to death or permanent inactivation of the microorganisms, thus preventing spoilage and foodborne diseases.

3. You have been appointed to assess the nutritional status of people living in your community so as to develop health care programmes. What five dietary assessment methods would you opt to use to determine the nutritional status of the adult population in your community?

The first method is the 24-hour dietary recall, where individuals are asked to recall all the food and drinks they consumed in the past 24 hours to estimate their nutrient intake.

The second method is the food frequency questionnaire, which assesses how often specific food items are consumed over a certain period, such as a week or month.

The third method is the food diary or food record, where individuals record all foods and drinks consumed over several days, including the quantities and preparation methods.

The fourth method is the weighed food intake method, where the actual weights of all foods consumed are measured before eating, offering highly accurate information on food and nutrient intake.

The fifth method is the household food inventory, which involves listing and quantifying all foods available in the household to estimate dietary patterns and access to food.

4. You have been consulted by a new businessman who is unaware of the departments for a proper management of his tourist hotel. Assist him by categorising five main departments of a tourist hotel.

The first department is the Food and Beverage Department, which is responsible for preparing, serving, and managing food and drinks within the hotel premises.

The second department is the Housekeeping Department, tasked with maintaining cleanliness, hygiene, and guest comfort in all hotel rooms and public areas.

The third department is the Front Office Department, which manages guest check-in and check-out services, reservations, and general customer service inquiries.

The fourth department is the Maintenance and Engineering Department, responsible for the maintenance and repair of hotel facilities, equipment, and infrastructure.

The fifth department is the Accounts and Finance Department, which handles financial transactions, budgeting, payroll, and the overall financial management of the hotel.

5. Marasmus is one of the severe forms of Protein–Energy Malnutrition affecting most under-five children in developing countries; yet many people are not able to detect the problem for immediate control. Identify six indicators and four control measures of the condition.

   Six indicators of marasmus include severe wasting of muscles and fat tissues leading to a very thin appearance, prominent ribs and bones, sunken eyes, dry and wrinkled skin, irritability and crying, and delayed growth and development in children.

   Four control measures include providing adequate energy-rich and balanced diets with sufficient protein and essential nutrients, promoting exclusive breastfeeding for the first six months of life, offering nutrition rehabilitation services for severely malnourished children, and educating parents and caregivers on proper child feeding practices.

6. Identify two groups of menu and three types of common restaurant menus from which you can select the best menus for your restaurant so as to attract more customers.

   Two groups of menus are the a la carte menu, which lists food items separately with individual prices and allows customers to choose specific dishes, and the table d'hôte menu, which offers a set number of courses with a fixed price.

   Three types of common restaurant menus include the static menu, which remains unchanged for an extended period and is common in fast-food establishments; the cycle menu, which changes daily or weekly and repeats after a set period; and the specialty menu, which features food items designed for specific occasions or dietary needs, such as vegetarian or diabetic-friendly dishes.

7. "The causes of undernutrition are multisectoral embracing food, health and caring practices." Support this statement by analyzing the immediate, underlying and basic causes of undernutrition among children under five years. Use the conceptual framework on the causes of undernutrition to show diagrammatically how each level of factors contributes to undernutrition.

   Undernutrition among children under five is caused by factors operating at three levels: immediate, underlying, and basic causes. Immediate causes include inadequate dietary intake and disease. When children do not receive enough nutrients or suffer from infections like diarrhea or respiratory diseases, their nutrient absorption and utilization decline, leading directly to undernutrition.

   Underlying causes involve household and community food insecurity, inadequate care and feeding practices, unhealthy household environments, and lack of access to health services. For example, food insecurity may limit the quantity and quality of food available to the child, while poor hygiene and sanitation increase exposure to infections, worsening nutritional status.

   Basic causes are related to broader societal factors such as poverty, lack of education, political instability, and poor infrastructure. These affect the availability of resources, social and economic services, and influence the capacity of families to provide proper care, food, and health services.

   Diagrammatically, the framework places immediate causes at the center, directly leading to undernutrition. Surrounding this are the underlying causes at household and community levels. The outermost layer consists of basic causes at the societal level, which influence and determine the underlying causes. Together, these three levels create a complex system where each factor interacts to affect the nutritional status of children.

8. It has been observed that most community nutrition programmes are not doing well in some of the Tanzanian districts. Elaborate six important factors the District Nutrition Programme Practitioners have to consider for successful community nutrition programmes.

The first factor is community involvement. Engaging community members ensures the programmes are relevant, accepted, and sustainable.

The second factor is adequate funding and resource allocation. Without sufficient financial and material support, programmes cannot be effectively implemented.

The third factor is skilled and trained personnel. Nutrition practitioners need proper training to design, execute, and monitor nutrition interventions.

The fourth factor is effective coordination and collaboration among sectors such as health, agriculture, education, and social welfare to address the multifaceted nature of nutrition.

The fifth factor is continuous monitoring and evaluation to track progress, identify challenges, and make necessary adjustments for improved outcomes.

The sixth factor is culturally appropriate nutrition education and communication strategies that respect local beliefs and practices, increasing the likelihood of behavioral change.

9. Food handlers can be a good source of food contamination and facilitators of cross-contamination in food preparation and processing. Support this statement by describing:

(a) Three ways through which food handlers can contaminate food.

One way food handlers contaminate food is through poor personal hygiene, such as not washing hands properly after using the toilet, which transfers harmful pathogens to food.

A second way is through handling food when sick, especially if they have infections like diarrhea or respiratory illnesses, which can spread microorganisms to food.

A third way is by cross-contaminating food when using the same utensils or surfaces for raw and cooked foods without cleaning them in between, transferring pathogens from raw to ready-to-eat foods.

(b) Six ways of preventing food contamination by food handlers.

First, food handlers should practice thorough and regular handwashing with soap and water before handling food, after using the toilet, and after touching any potentially contaminated surfaces.

Second, food handlers must avoid working when they are sick or showing symptoms of communicable diseases to prevent transmitting pathogens.

Third, proper use of protective clothing such as gloves, aprons, and hairnets helps reduce contamination.

Fourth, separate utensils and cutting boards should be used for raw and cooked foods to prevent cross-contamination.

Fifth, food handlers should maintain clean work surfaces and regularly sanitize kitchen equipment.

Sixth, ongoing training and education for food handlers on food safety and hygiene practices ensure they understand their role in preventing contamination.