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**   **Friday, 10th May 2019 p.m**

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) Briefly explain how diseases cause undernutrition to children.

Diseases cause undernutrition in children by reducing appetite, which leads to decreased food intake and insufficient nutrient consumption. Illnesses such as diarrhea increase nutrient loss from the body and reduce nutrient absorption in the digestive tract. Additionally, infections raise the body's metabolic demands, meaning the child requires more nutrients to recover, but the illness often limits intake and absorption, resulting in nutrient deficiencies and undernutrition.

(b) Briefly explain three effects of undernutrition to the economy of a country.

Undernutrition reduces the workforce productivity because malnourished individuals tend to have less energy, poor concentration, and higher absenteeism, which lowers overall economic output. It increases healthcare costs since undernourished people are more susceptible to diseases, requiring more medical treatment and resources. Lastly, undernutrition hampers educational outcomes because affected children often perform poorly in school, leading to a less skilled workforce in the future, which limits economic growth.

2. (a) Differentiate food industry quality program from food industry quality system.

A food industry quality program refers to specific activities and initiatives designed to ensure product quality during production, such as inspections and testing. It is usually limited to certain quality-related tasks. In contrast, a food industry quality system is a comprehensive framework that integrates all processes, procedures, and policies to manage quality throughout the entire food production chain, including planning, control, assurance, and improvement.

(b) Give four reasons for implementing quality assurance programs in food industries.

One reason is to ensure food safety and protect consumers from foodborne illnesses. Another is to comply with national and international food regulations and standards. Quality assurance programs help maintain product consistency, ensuring customers receive the same quality every time. They also enhance the reputation of the company, building consumer trust and loyalty.

3. (a) State four rules to be observed in handling raw and cooked foods in order to prevent cross contamination.

One rule is to store raw foods separately from cooked foods to avoid contact and transfer of harmful microbes. Another is to use different utensils and cutting boards for raw and cooked foods. Clean hands thoroughly after handling raw foods before touching cooked foods. Finally, ensure proper cooking of foods to kill any microorganisms that may have been transferred.

(b) Outline four uses of microorganisms in food processing and preservation and give one example of microorganism in each use.

One use is fermentation, which improves flavor and preserves food; for example, Lactobacillus in yogurt production. Another is in production of antibiotics and enzymes, such as Penicillium used to produce cheese. Microorganisms can also be used in biopreservation, where they inhibit spoilage microbes; for instance, bacteriocins produced by Lactococcus lactis. Lastly, microorganisms are used in baking, with yeast (Saccharomyces cerevisiae) fermenting sugars to produce carbon dioxide for leavening bread.

4. (a) The candidates were required to define nutrition rehabilitation program.

A nutrition rehabilitation program is a planned set of interventions aimed at restoring the nutritional status of individuals, especially malnourished children, through treatment, feeding, and education to promote recovery and prevent recurrence.

(b)
(i) State three objectives of nutrition rehabilitation programs.

One objective is to improve the nutritional status of malnourished individuals. Another is to treat underlying infections or diseases contributing to malnutrition. A third objective is to educate caregivers on proper feeding practices to prevent future malnutrition.

(ii) Identify four indicators of successful nutrition rehabilitation program.

Indicators include weight gain or improvement in body mass index (BMI). Another is recovery from symptoms of malnutrition, such as edema disappearance. Improved appetite and dietary intake are also indicators. Finally, increased physical activity and normal development suggest success.

5. (a) Briefly describe two main factors which contribute to poor food hygiene.

One factor is inadequate knowledge and training of food handlers, leading to improper food handling and storage. Another is poor environmental sanitation, including contaminated water and unclean preparation areas, which promotes food contamination.

(b) Outline four hygienic problems associated with street-vended foods.

One problem is exposure to dust and flies which can contaminate food. Another is lack of proper handwashing facilities for vendors. Food may also be stored or displayed in unsanitary conditions. Lastly, vendors sometimes use unsafe water for washing utensils or preparing food.

6. Analyze six common indicators which are used to assess the nutritional status of the people.

One indicator is weight-for-age, which measures a person's body weight compared to the expected weight for their age, helping identify underweight conditions.

Another is height-for-age, which assesses whether an individual's height is appropriate for their age, identifying stunted growth due to chronic undernutrition.

A third indicator is weight-for-height, which compares body weight to height, used to detect wasting or thinness, often indicating acute malnutrition.

Body Mass Index (BMI) is a commonly used indicator in adults, calculated by dividing weight in kilograms by the square of height in meters, and helps classify underweight, normal, overweight, or obesity.

Mid-upper arm circumference (MUAC) is a simple tool used to measure muscle and fat mass in children and pregnant women to detect malnutrition.

Lastly, clinical assessment involves checking for visible physical signs of malnutrition like edema, dry skin, hair changes, and weakness, offering immediate evidence of nutritional deficiencies.

7. Describe nine health services offered in Reproductive and Child Health clinics.

Antenatal care services are provided to monitor and maintain the health of pregnant women and their unborn babies.

Postnatal care services support the mother and baby after delivery, ensuring recovery and early detection of complications.

Family planning services offer contraceptives and counseling to help individuals manage birth spacing and reproductive health.

Child immunization programs protect infants and children against vaccine-preventable diseases.

Growth monitoring services track children's growth to detect early signs of malnutrition and illnesses.

Nutrition education is provided to pregnant and breastfeeding mothers on balanced diets and child feeding practices.

Screening and treatment for sexually transmitted infections (STIs) are conducted to prevent complications and disease transmission.

HIV counseling and testing services are offered to pregnant women and others to prevent mother-to-child transmission.

Health education sessions are organized on personal hygiene, breastfeeding, safe delivery practices, and other health topics.

8. Account for nine social-cultural and economic factors to be considered in menu planning in a catering establishment.

Religious beliefs influence food selection as some religions prohibit certain foods, such as pork for Muslims.

Cultural traditions determine preferred food types, preparation methods, and meal patterns.

Age of the clients affects menu choices, as children, adults, and the elderly have different nutritional needs.

Gender can influence portion sizes and nutrient requirements, with men generally needing more calories than women.

Health status is important, as individuals with specific conditions like diabetes require tailored meals.

Seasonal availability of food items affects menu planning, as certain foods may be more accessible or affordable during specific seasons.

Economic status of the clients influences the affordability and type of food offered.

Social occasions or functions require menus suited to the nature of the event, like weddings, funerals, or business meetings.

Local food preferences and tastes should be considered to satisfy clients and avoid food wastage.

9. Explain nine important issues that should be included in nutrition education to ensure proper growth and reduction of all forms of undernutrition in children.

The importance of exclusive breastfeeding for the first six months should be emphasized to provide infants with essential nutrients.

Complementary feeding practices should be introduced appropriately from six months while continuing breastfeeding.

Balanced diets containing all food groups must be promoted for children of all ages.

Personal and food hygiene practices must be taught to prevent foodborne illnesses that contribute to malnutrition.

Awareness on the prevention and treatment of common childhood diseases like diarrhea should be provided.

Information about food fortification and nutrient supplementation programs should be shared.

Mothers should be educated on recognizing signs of malnutrition and when to seek medical help.

Safe food preparation and storage practices should be demonstrated to caregivers.

Nutrition education should also address the importance of immunization in protecting children from nutrition-related diseases.

10. "The catering industry makes a valuable contribution to individuals, communities and nations." Elaborate this statement by explaining four economic and two social contributions of catering industry to our nation.

Economically, the catering industry creates employment opportunities in various positions such as chefs, waiters, and managers.

It generates government revenue through taxes and licensing fees paid by catering businesses.

The industry promotes agricultural development by increasing the demand for food crops and livestock products.

It supports tourism by providing food services to tourists, contributing to foreign exchange earnings.

Socially, the catering industry enhances social interaction by offering venues for gatherings, celebrations, and meetings.

It also contributes to improved nutrition and health by providing balanced meals in schools, hospitals, and workplaces.