THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL

ADVANCED CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

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

(For Both School and Private Candidates)

Time : 3 Hours **ANSWERS** **Year : 2012**

Instructions

1. This paper consists of sections **A** and **B**.
2. Answer all questions in section **A** and only **two (2)** question from section **B**.
3. Non-programmable calculators may be used.
4. Communication devices and any unauthorised materials are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

1. Define food quality assurance systems and explain five activities involved in such systems.

Food quality assurance systems are organized procedures designed to ensure that food produced and served to consumers is safe, nutritious, and meets established standards. These systems involve continuous monitoring, evaluation, and corrective actions at all stages of food production and handling, from raw materials to the final product.

One activity in food quality assurance is inspection of raw materials. This involves checking ingredients before they enter the production line to make sure they meet safety and quality standards. Poor-quality raw materials are rejected to prevent contamination or health risks.

Another activity is monitoring production processes. Each stage, such as cleaning, cooking, and packaging, is carefully observed to ensure it is carried out under hygienic conditions and within the required parameters. This reduces the risk of contamination.

Quality testing is also important. Laboratory tests are conducted to detect pathogens, toxins, or harmful chemicals in food. This scientific evaluation helps to confirm that food is safe for human consumption.

Documentation and record-keeping form another activity. Keeping accurate records of procedures, test results, and corrective measures ensures accountability and makes it easier to trace problems when they arise.

Finally, staff training is an essential activity. Workers involved in food production are regularly trained in hygiene, safety standards, and handling procedures to reduce human errors that may compromise food quality.

2. Marasmus is a severe form of Protein–Energy Malnutrition. Identify six indicators and four control measures of the condition.

Marasmus is a life-threatening condition that arises from chronic deficiency of protein and calories. It often affects children under five years and is characterized by severe wasting of body tissues.

One indicator of marasmus is extreme thinness, where the child's ribs, bones, and joints are visibly protruding due to loss of muscle and fat.

Another indicator is growth retardation. Children suffering from marasmus are shorter and smaller than normal for their age because of long-term nutrient deprivation.

A third indicator is wrinkled and loose skin. Since fat beneath the skin disappears, the skin hangs loosely, giving an aged appearance.

A fourth indicator is weakness and lethargy. A marasmic child has very little energy and is unable to play or perform normal activities.

A fifth indicator is delayed development. Both cognitive and physical development are significantly slowed down compared to healthy children.

The sixth indicator is frequent illness. Marasmus weakens the immune system, making the child more vulnerable to infections such as diarrhoea and pneumonia.

One control measure is promoting exclusive breastfeeding for the first six months of life, since breast milk provides sufficient nutrients to prevent marasmus in infants.

Another measure is providing nutrient-dense complementary foods after six months, ensuring adequate protein and calories in the diet.

Nutrition education for mothers is also a control measure. Mothers need to learn about balanced diets, food hygiene, and proper child feeding practices.

Finally, poverty reduction strategies play a role. By improving household incomes and access to food, families can afford nutritious diets that prevent protein–energy malnutrition.

3. Describe six techniques of promotion used in catering establishments.

One promotional technique used in catering is advertising. Restaurants and hotels place adverts in newspapers, on radio, or social media to attract customers and make them aware of services offered.

Another technique is sales promotion. Catering establishments introduce offers such as discounts, coupons, or “buy one, get one free” deals to encourage more sales within a short time.

Personal selling is also widely applied. Staff such as waiters and front-desk personnel interact directly with customers, convincing them to try new dishes or services.

Public relations serve as another promotional technique. Catering establishments participate in charity events or community development activities, building a positive image and attracting more clients.

The use of attractive menu displays also promotes sales. Menus with appealing pictures, detailed descriptions, and well-organized layouts entice customers to try more dishes.

Finally, loyalty programmes are used. Restaurants reward repeat customers with points, vouchers, or exclusive offers, which motivates them to return and bring in new clients.

4. Differentiate active immunization from passive immunization and explain two advantages of passive immunization.

Active immunization is the process of stimulating the body's immune system to produce its own antibodies after exposure to a vaccine or infection. It provides long-term protection because the immune system develops memory against the specific disease.

Passive immunization, on the other hand, is the transfer of ready-made antibodies from one person or animal to another. This protection is temporary since the body does not produce its own immune response.

One advantage of passive immunization is that it provides immediate protection. For example, in cases of snakebite or rabies exposure, antiserum is given to save life quickly before the body has time to respond naturally.

Another advantage is that it can protect individuals with weak immune systems. People who cannot produce adequate antibodies due to illness or very young age benefit from passive immunization as a temporary safeguard.

5. Identify two groups of menu and three types of common restaurant menus that can be used to attract customers.

One group of menu is the table d'hôte menu. This offers a set number of courses at a fixed price, giving customers variety at an affordable cost.

Another group is the à la carte menu. In this menu, dishes are priced separately, and customers can choose according to their preferences and budgets.

One type of restaurant menu is the cycle menu. This is a planned set of dishes that repeats after a certain period, often used in institutions like schools and hospitals.

Another type is the specialty menu. It focuses on a particular cuisine or food category, such as seafood menus or vegetarian menus, attracting specific customer groups.

The third type is the static menu. This remains unchanged for a long time and is commonly used in fast-food restaurants where consistency is required.

6. Support the statement, "Requirements for growth of microorganisms are identical regardless of whether they are harmful or beneficial organisms," by describing four extrinsic factors that influence growth of microorganisms in foods.

One extrinsic factor influencing growth is temperature. Both harmful and beneficial microbes require specific temperature ranges for growth, whether it is pathogenic bacteria or fermentation organisms.

Another factor is oxygen availability. Some microbes need oxygen to thrive, while others grow best in anaerobic conditions. Both categories are subject to the same oxygen requirements depending on their type.

Relative humidity is also an extrinsic factor. Moist environments encourage microbial activity, while dry conditions slow growth, regardless of whether the organism is useful or harmful.

The surrounding environment and packaging conditions also play a role. Proper packaging that excludes oxygen or reduces moisture can limit microbial growth, which applies equally to spoilage organisms and beneficial microbes used in food processing.

7. Explain seven causes of undernutrition among expectant women and suggest two strategies to overcome micronutrient deficiencies.

One cause of undernutrition among expectant women is inadequate dietary intake. Pregnant women often fail to consume enough energy and protein to meet increased nutritional demands.

Another cause is poverty. Many expectant mothers cannot afford diverse and nutritious foods, leading to deficiencies.

Frequent infections also contribute to undernutrition. Illnesses such as malaria or diarrhoea increase nutrient loss and reduce appetite, worsening the condition.

Cultural practices can cause undernutrition. In some communities, women eat last or avoid certain foods during pregnancy, which reduces dietary variety.

Poor access to healthcare is another cause. Expectant women who lack antenatal care miss guidance on proper nutrition and micronutrient supplementation.

Heavy workloads increase nutritional needs. Pregnant women who continue doing strenuous labor without increased food intake suffer undernutrition.

Early pregnancies also raise the risk. Young mothers are still growing themselves, and competing nutrient demands between mother and fetus worsen deficiencies.

One strategy to overcome micronutrient deficiencies is supplementation. Providing iron, folic acid, and vitamin A tablets helps meet the increased demands of pregnancy.

Another strategy is food fortification. Staple foods such as flour and cooking oil can be fortified with micronutrients to benefit pregnant women at community level.

8. Describe briefly eight features of successful nutrition intervention programmes.

One feature of successful nutrition programmes is community involvement, where local participation ensures acceptance and sustainability.

Another feature is cultural relevance. Programmes are tailored to respect food habits and traditions of the community.

Sustainability is also key. Interventions should continue providing benefits long after external support ends.

Clear goals and measurable objectives form another feature. They help monitor progress and adjust strategies as needed.

Integration with other sectors strengthens programmes. Nutrition is linked to health, agriculture, and education, so collaboration ensures wider impact.

Adequate resource allocation is also critical. Funds, trained personnel, and facilities determine programme effectiveness.

Capacity building is another feature. Training community members ensures continuity and self-reliance.

Lastly, monitoring and evaluation must be in place. This provides feedback to improve effectiveness and accountability.

9. Give seven reasons for controlling resources and two techniques of controlling resources in the catering industry.

One reason for controlling resources is to minimize wastage. Proper monitoring ensures ingredients are used efficiently without unnecessary loss.

Another reason is cost control. By tracking resources, catering businesses can manage expenses and increase profitability.

Resource control also improves quality. Consistent use of the right ingredients and procedures ensures customers receive standardized meals.

It helps maintain hygiene and safety. Controlling how food is stored, handled, and prepared reduces contamination risks.

Resource control supports accountability. Employees become responsible for their roles, reducing misuse or theft of materials.

It also enhances customer satisfaction. When resources are managed well, services become reliable and timely.

Finally, it ensures sustainability. Efficient use of resources allows catering establishments to remain competitive and long-lasting.

One technique of controlling resources is stock management, where inventories are regularly checked, and stock rotation (first in, first out) is applied.

Another technique is portion control, ensuring standard serving sizes are used to avoid overuse of ingredients while maintaining consistency.

10. Explain why dietary surveys may provide inaccurate information for the assessment of nutritional status in a community.

Dietary surveys may be inaccurate because respondents often fail to recall what they ate correctly. Memory lapses and underreporting lead to unreliable data.

Another reason is dishonesty or social desirability. Some respondents give answers they think are acceptable instead of reporting their actual intake.

Portion size estimation is also difficult. People may not know exact quantities of food consumed, which leads to miscalculation of nutrient intake.

Dietary habits vary day to day. A short-term survey may not capture the usual eating pattern of individuals, giving misleading results.

Cultural differences may also affect responses. In some communities, certain foods are not mentioned or recognized, resulting in incomplete data.

Enumerator errors can contribute as well. Poorly trained surveyors may misinterpret responses, record incorrect details, or influence answers.