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** **Monday, 14th May 2018 a.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) Define food quality assurance systems and state their importance.

Food quality assurance systems refer to organized procedures and processes designed to ensure that food products meet specific quality standards and are safe for consumption. These systems monitor every stage of food production, from raw materials to the finished product, to guarantee consistency, safety, and compliance with regulatory requirements.

The importance of food quality assurance systems lies in protecting consumer health by preventing foodborne illnesses. They also help maintain product consistency, enhance customer satisfaction, comply with legal standards, reduce wastage, and improve the overall reputation of food producers and suppliers.

(b) Explain briefly five activities involved in quality assurance systems.

One activity is inspection, where raw materials and finished products are examined to ensure they meet quality standards.

Another activity is sampling and testing, which involves taking representative samples and conducting laboratory tests to detect contaminants or verify composition.

Documentation and record keeping is also important, as it tracks processes and any deviations, providing traceability in case of problems.

Training personnel ensures that all workers understand quality standards and procedures, reducing human errors.

Lastly, corrective actions are implemented when defects or non-conformities are detected to prevent recurrence and improve the system.

2. Describe briefly eight features of successful nutrition intervention programs.

First, clear objectives are essential so that the program has defined goals for what it aims to achieve.

Second, community involvement is critical to ensure acceptance and sustainability of the intervention.

Third, programs should be culturally appropriate, respecting local food habits and traditions.

Fourth, accessibility of the intervention means the target group can easily participate or benefit.

Fifth, programs need to be based on scientific evidence to be effective and reliable.

Sixth, flexibility allows the program to adapt to changing circumstances or feedback.

Seventh, monitoring and evaluation must be continuous to assess progress and impact.

Eighth, adequate funding and resources are necessary to support all activities within the program.

3. (a) Define the term “standard recipe”.

A standard recipe is a detailed set of instructions and specifications for preparing a particular food item to ensure consistency in taste, quality, and quantity every time it is made.

(b) Describe briefly seven items to be included in a standard recipe.

One item is the name of the dish, which clearly identifies what is being prepared.

Ingredients list with exact quantities is necessary for consistency.

Preparation steps provide detailed instructions on how to prepare and cook the food.

Cooking time and temperature specify how long and at what heat the food should be cooked.

Portion size indicates the amount each serving should be.

Yield specifies the total number of servings or amount produced.

Finally, equipment needed lists any special tools or utensils required for preparation.

4. (a) (i) Mention three foods associated with outbreak of staphylococcal food poisoning.

One food is cream-filled pastries because they provide a rich medium for bacterial growth.

Another is processed meats such as ham or sausages that may be handled and left at room temperature.

Third is salads containing mayonnaise, like potato or egg salad, which can easily be contaminated.

(ii) Mention five symptoms of staphylococcal food poisoning.

Symptoms include nausea, vomiting, abdominal cramps, diarrhea, and sometimes fever.

(b) State four steps used to limit the incidence of staphylococcal enterotoxin in food.

First, proper handwashing by food handlers to reduce contamination.

Second, cooking food thoroughly to kill bacteria.

Third, rapid cooling and proper refrigeration to prevent bacterial growth.

Fourth, avoiding leaving prepared food at room temperature for long periods.

5. (a) Define nutrition education and give its role.

Nutrition education is the process of teaching individuals or communities about healthy dietary habits and the importance of balanced nutrition to improve their overall health.

Its role is to empower people with knowledge and skills to make informed food choices that prevent malnutrition and diet-related diseases.

(b) Briefly, describe three major components of nutrition education.

The first component is knowledge transfer, which involves providing factual information about nutrients, food groups, and health.

The second is skill development, teaching practical abilities like meal planning, cooking, and reading food labels.

The third is behavior change, encouraging individuals to adopt and maintain healthy eating habits through motivation and support.

6. Give seven reasons for controlling resources and two techniques of controlling resources in a catering industry.

One reason for controlling resources is to reduce wastage of materials such as food ingredients and supplies, which helps cut costs.

Another reason is to ensure efficient use of resources, maximizing productivity without unnecessary excess.

Controlling resources helps maintain quality standards by avoiding the use of substandard or expired materials.

It also assists in budgeting and financial planning by monitoring expenditure closely.

Resource control prevents theft and pilferage by tracking inventory accurately.

It ensures timely availability of materials, avoiding interruptions in production or service.

Lastly, controlling resources supports sustainability by minimizing environmental impact through reduced waste.

Two techniques for controlling resources are inventory control, which involves regularly checking stock levels and usage to prevent shortages or excess.

Another technique is portion control, where standardized serving sizes are used to ensure consistency and avoid overuse of food items.

7. Analyze six practical solutions to nutrition problems.

First, improving dietary diversity by encouraging consumption of various food groups to provide necessary nutrients.

Second, nutrition education campaigns can raise awareness about balanced diets and healthy eating habits.

Third, food fortification involves adding essential vitamins and minerals to commonly consumed foods to prevent deficiencies.

Fourth, supplementation programs provide specific nutrients like vitamin A or iron to at-risk populations.

Fifth, improving food security by enhancing agricultural productivity ensures adequate food availability.

Sixth, promoting exclusive breastfeeding for infants improves their nutritional status and immunity.

8. Support the statement, “Requirements for growth of microorganism are identical regardless of whether they are harmful or beneficial organisms”, by:

(a) Classifying the microorganisms important in food microbiology.

Microorganisms important in food microbiology include bacteria, which can be both harmful pathogens or beneficial fermenters.

Fungi, such as molds and yeasts, which can cause spoilage or be used in fermentation.

Viruses, which may contaminate food but do not grow in it.

Protozoa, some of which can cause foodborne diseases.

(b) Describing four extrinsic factors that influence growth of microorganisms in foods.

One extrinsic factor is temperature, which affects the rate of microbial growth; most microbes grow faster at warmer temperatures.

Another is relative humidity, where higher moisture levels support microbial proliferation.

The gaseous atmosphere around food influences microbial growth; for example, oxygen availability can promote aerobic bacteria.

Time is also a factor; the longer food is stored under favorable conditions, the more microorganisms can multiply.

9. Describe six health practices to be addressed when providing nutrition education to mothers having undernourished children.

First, emphasizing personal hygiene, such as regular handwashing before food preparation and feeding.

Second, promoting safe food handling and proper cooking to prevent infections.

Third, encouraging exclusive breastfeeding for the first six months to provide essential nutrients and immunity.

Fourth, educating about balanced diets to include protein, vitamins, and minerals needed for growth.

Fifth, ensuring access to clean drinking water to prevent waterborne diseases.

Sixth, timely immunization of children to protect against infections that can worsen nutritional status.

10. "Breastfeeding practice is the best way of feeding infants and it should be promoted in developing countries". Support this statement by:

(a) Describing seven measures to control promotion and use of infant formulae.

One measure is enforcing regulations that restrict advertising of infant formula to avoid undermining breastfeeding.

Second, providing accurate information to mothers about the benefits of breastfeeding over formula feeding.

Third, health facilities should follow the Baby-Friendly Hospital Initiative guidelines that encourage breastfeeding.

Fourth, training health workers to support and counsel mothers on breastfeeding.

Fifth, monitoring marketing practices of infant formula companies to ensure compliance with standards.

Sixth, community education campaigns to raise awareness about breastfeeding benefits.

Seventh, government policies to limit distribution of free formula samples to mothers.

(b) Suggesting four alternative ways that working mothers can apply to make sure that their infants are fed with breast milk during working hours.

One way is expressing and storing breast milk before work so it can be fed to the infant later.

Second, arranging flexible working hours or breaks to allow time for breastfeeding.

Third, having a designated clean and private space at the workplace for breastfeeding or milk expression.

Fourth, involving family members or caregivers to feed the expressed breast milk to the infant during the mother's absence.