

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

155/1

FOOD AND HUMAN NUTRITION 1

(For Both School and Private Candidates)

Time: 3 Hours

Year: 2022

Instructions

1. This paper consists of sections **A** and **B**.
2. Answer **all** questions in section **A** and only **Two (2)** 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).

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SECTION A (60 Marks)

Answer all questions in this section.

1. (a) "Fortification being a food based method offers several benefits in health and food processing and preservation". Justify this statement in four points.

(b) Identify two major methods of food fortification.
2. Not all dietary iron is absorbed equally in the body. Support this statement by analysing,
(a) Three groups of food which enhance the body's ability to absorb iron.
(b) Two groups of food which hinder the body's ability to absorb iron.
3. Suppose you were invited to a training on baking process to present about raising agents;
(a) Briefly explain four types of chemical raising agents you would include in your presentation.
(b) Advise the participants on how they should store the chemical raising agents.
4. (a) Differentiate chronic food insecurity from transitory food insecurity.

(b) Analyse the effects of the following factors on food production in Tanzania:
(i) Rapid population growth.
(ii) Civil conflicts.
(iii) Acquired Immune-Deficiency Syndrome (AIDS).
(iv) Environmental degradation.
5. A patient who is suffering from diabetes mellitus has been referred to you by a physician for nutritional counseling. Recommend five dietary practices of managing his/her illness.
6. (a) Briefly explain:
(i) How food safety differs from other characteristics of food quality.
(ii) The aim of food quality assurance system in a food company.
(b) What are the reasons for implementation of food quality assurance programmes in food industry? Give four points.

SECTION B (60 Marks)

Answer two questions from this section.

7. Explain six primary causes of food losses in the post-harvest food chain.
8. Dr. Aggrey is a lecturer at the university, he is 38 years old and weighs 65 kilograms. On 5th August 2021, he recorded the activities and the time he spent on each activity as shown in the following table.

S/N	Activity	Time used (minutes)	Energy expenditure in each activity (kcal/kg/min)
1.	showering	20	0.047
2.	dressing	10	0.038
3.	driving	50	0.056
4.	Walking upstairs	10	0.254

5.	Walking down stairs	7	0.098
6.	Walking normally	70	0.069
7.	Having meals and drinks	50	0.020
8.	Marking assignments	188	0.029
9.	lecturing	240	0.035
10.	Watching TV	65	0.017
11.	Attending natural calls	15	0.027
12.	Sitting and chatting	60	0.026
13.	Writing journal	165	0.027
14.	sleeping	494	0.016

- (a) Describe the three major components of total energy expenditure.
 - (b) Calculate the components mentioned in (a) and the total energy expenditure by Dr. Aggrey. Use the factorial method where applicable.
 - (c) If Dr. Aggrey consumed 540gm carbohydrate, 250 gm protein, 80 gm fat and 2,750 mills water; compare the energy consumption and expenditure then advise him accordingly.
9. Describe six traditional methods used in storing food grains in order to minimize losses during storage.