

**THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA**



FORM TWO NATIONAL ASSESSMENT (FTNA) FORMATS

**ISSUED BY
THE NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
P. O. BOX 2624
DAR ES SALAAM
TANZANIA**

SPECIAL EDITION APRIL, 2021



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FOREWORD

This formats booklet is a special revised version of the Form Two National Assessment Formats issued in 2017 by the National Examinations Council of Tanzania (NECTA). The version responds to the changes made in 2019 syllabuses for some of the optional subjects in secondary school. In particular, the review covers the following subjects: Arabic Language, Agriculture, Engineering Science, Home Economics, Electrical Engineering, Electronics and Communication Engineering, Mechanical Engineering, Engineering Drawing, Building Construction, Architectural Draughting, Civil Engineering Survey and Woodwork and Painting Engineering. These subjects will effectively be assessed using the revised formats in 2021.

The revision of the syllabuses occurred due to a shift in emphasis of teaching and learning from content to competence based pedagogy. Such revision was featured by the following changes: the removal of some topics/content to comply with the development of technology, merging and splitting of some of the topics and others shifted from one level to another, and changing some of the subject names, for example, Agricultural Science to Agriculture. Other related subjects have been merged to form a single subject such as Home Economics, Electrical Engineering, Electronics and Communication Engineering, Construction Field and Mechanical Engineering.

Each subject format is presented in five sub-sections namely; introduction, general objectives, general competences, rubric and content. The table of specification is also provided at the end of format in order to inform teachers on the nature and structure of the examination. The format is designed to be used hand in hand with the syllabuses as an extra guiding tool to teachers and other educational stakeholders on assessment procedures in Form Two National Assessment. These formats will also help examiners in composing relevant assessment papers, which fulfil the requirement of the syllabus.

Teachers and other stakeholders are therefore strongly encouraged to take advantages of the guidelines provided in each format to improve their practices of assessing their learners and harmonize their personal and school based assessment procedures with those used by the National Examinations Council of Tanzania. However, it is recommended that the use of these formats should not replace the use of the subject syllabuses, in guiding the teaching and learning processes.

The development of this document involved various stakeholders from the school level to the Council level. I would like to extend my sincere gratitude to all officers and all individuals for their commitment, dedication, inputs, and willingness to participate in the preparation of these assessment formats.



Dr. Charles E. Msonde
EXECUTIVE SECRETARY

025 ARABIC LANGUAGE

1.0 INTRODUCTION

The Arabic Format is a revised version of the 2017 format issued by National Examinations Council of Tanzania. This Format has been revised to accommodate changes made in the new Arabic Language syllabus for Ordinary level Secondary Education issued in 2019 by the Ministry of Education, Science and Technology. Some of the changes made include addition of some topics, omission of some topics and shifting of some topics from one level to another. In this format, the emphasis is placed on competence based assessment.

2.0 GENERAL OBJECTIVES

The assessment will test the extent to which the students can:

- 2.1 understand the Arabic conversations, articles and short stories;
- 2.2 express himself or herself in different contexts in a simple Arabic Language;
- 2.3 read short stories and summarize them in short and simple words; and
- 2.4 write short Arabic articles.

3.0 GENERAL COMPETENCES

The assessment will measure the students' ability to:

- 3.1 read and understand the Arabic short articles;
- 3.2 write Arabic words, articles, essays and short stories;
- 3.3 articulate learning needs and describe the environment around him or her; and
- 3.4 express ideas and situations by using simple Arabic Language.

4.0 ASSESSMENT RUBRIC

The assessment will consist of **one (1)** paper with duration of **2:30** hours. The paper will consist of three sections namely A, B and C with a total of **ten (10)** questions. Students will be required to answer **all** questions in each section. The paper will weigh a total of **100** marks.

Section A will comprise of **two (2)** objective questions set from various topics of the syllabus. Question 1 will consist of **ten (10)** multiple-choice items from which students will be required to choose the correct answer from the alternatives given. Each item will carry **one (1)** mark, making a total of **ten (10)** marks. Question 2 will be a matching items with **five (5)** items. Each item will carry **one (1)** mark, making a total of **five (5)** marks. Therefore, this section will weigh a total of **15** marks.

Section B will have **seven (7)** short answers questions. Each question will carry **ten (10)** marks, making a total of **70** marks for this section.

Section C will comprise of **one (1)** question on composition with the weight of **15** marks.

5.0 ASSESSMENT CONTENT

The students will be tested on the following topics:

- 5.1 Dialogue
- 5.2 Verbs, its types and the five verbs
- 5.3 Nouns, its types, the five nouns, definite and indefinite and “*Al-mamnu 'minassarf*”
- 5.4 Preposition and interrogative particles
- 5.5 Object
- 5.6 Meaningful sentences (Nominal sentences and verbal sentences)
- 5.7 Pronouns
- 5.8 Reading for comprehension
- 5.9 Composition
- 5.10 Inflected and uninflected words, The signs of inflection and the states of uninflected and inflection
- 5.11 Invalidating nouns and defective verbs

025 Arabic Language Table of Specification

S/N	Topics	Skills to be Tested						Number of Items	Percentage Weight per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating	Creating		
1	Dialogue							1	5.3
2	Verbs its types and the five verbs.							3	15.7
3	Nouns/its types/the five nouns/Definite and indefinite/“ <i>Al-mamnu’minassarf</i> ”							3	15.7
4	Preposition and interrogative particles							1	5.3
5	Object							1	5.3
6	Meaningful sentences (Nominal sentences and verbal sentences)							2	10.5
7	Pronouns							1	5.3
8	Reading for comprehension							1	5.3
9	Composition							1	5.3
10	Inflection and uninflected words, The signs of inflection and the states of uninflected and inflection							3	15.7
11	Invalidating nouns and defective verbs							2	10.6
Total Numbers of Items								19	
Total Percentage Weight									100

034 AGRICULTURE

1.0 INTRODUCTION

This format is a revised version of 2017 Agriculture format. The format is based on the 2019 syllabus which was developed to replace the 1997 syllabus. The format reflects the changes made in the new syllabus including: the omission of some topics, introduction of new topics and shifting of some topics from one level to another. One notable change is that, the name of the subject has changed from Agricultural Science to Agriculture. In this format, the major emphasis is on the competence based assessment which focuses on students' creativity and ability to think critically and managing different problems in Agriculture field.

2.0 GENERAL OBJECTIVES

The Agriculture assessment aims at testing the students' ability to:

- 2.1 explain the concepts and role of agriculture in economic development;
- 2.2 describe the procedures of maintaining farm tools and machinery used in agricultural production;
- 2.3 analyse the effect of soil physical properties on crop production;
- 2.4 assess various crop and livestock farming systems practiced in Tanzania;
- 2.5 evaluate the factors of production in agriculture;
- 2.6 develop knowledge of farm management and decision making in agricultural production; and
- 2.7 observe the principles of crop production for increased crop productivity.

3.0 GENERAL COMPETENCES

The Agriculture assessment will test the students' ability to:

- 3.1 apply the concepts and appreciate the role of agriculture in daily life;
- 3.2 use appropriate farm tools in producing agricultural products;
- 3.3 maintain various farm tools and machinery used in agricultural production;

- 3.4 apply the knowledge of soil physical properties in crop production;
- 3.5 apply knowledge of crop and livestock farming systems in agricultural production;
- 3.6 apply managerial skills in agricultural production; and
- 3.7 use the principles of crop production in producing crop products.

4.0 ASSESSMENT RUBRIC

The Agriculture assessment will comprise of **one (1)** theory paper with duration of **2:30** hours. The paper will consist of three sections namely A, B and C with a total of **ten (10)** questions. Students will be required to answer **all** questions in each section. The paper will weigh a total of **100** marks.

Section A will consist of **two (2)** objective questions. Question 1 will be a multiple choice question consisting of **ten (10)** items from which students will be required to choose the correct answer from the alternatives given. Each item will carry **one (1)** mark, making a total of **ten (10)** marks. Question 2 will be a matching items consisting of **five (5)** items. Each item will carry **one (1)** mark, making a total of **five (5)** marks. Therefore, the section will weigh a total of **15** marks.

Section B will have **seven (7)** short answer questions. Each question will carry **ten (10)** marks. The section will carry a total of **70** marks.

Section C will have **one (1)** essay question which will carry **15** marks.

5.0 ASSESSMENT CONTENT

The following topics will be assessed:

- 5.1 Introduction to agriculture
- 5.2 Introduction to crop production
- 5.3 Principles of crop production
- 5.4 Crop husbandry
- 5.5 Introduction to livestock production
- 5.6 Introduction to soil science
- 5.7 Mechanization in agriculture
- 5.8 Factors of production
- 5.9 Basics of farm management

034 Agriculture Table of Specification

S/N	Topics	Skills to be Tested					Number of Items	Weight Percentage per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating		
1	Introduction to agriculture						1	5.3
2	Introduction to crop production						2	10.5
3	Principles of crop production						5	26.3
4	Crop husbandry						1	5.3
5	Introduction to livestock production						2	10.5
6	Introduction to soil science						2	10.5
7	Mechanization in agriculture						3	15.8
8	Factors of production						1	5.3
9	Basics of farm management						2	10.5
Total Number of Items							19	
Total Percentage Weight								100

035 ENGINEERING SCIENCE

1.0 INTRODUCTION

This assessment format is a revised version of the 2017 format issued by the National Examinations Council of Tanzania. The aim of preparing this format is to accommodate the change made in the revised syllabus of 2019 issued by the Ministry of Education, Science and Technology. The changes include the rearrangement of topics, addition of new topics as well as the removal of outdated contents. In this format, the emphasis is placed on competence based assessment.

2.0 GENERAL OBJECTIVES

The assessment will test the extent to which the students are able to:

- 2.1 identify the properties of matter;
- 2.2 make appropriate measurements of physical quantities;
- 2.3 use different types of forces in daily life;
- 2.4 identify the effects of motion in operation of machines;
- 2.5 make appropriate computations of work, energy and power;
- 2.6 produce and transmit sound waves;
- 2.7 identify properties of light;
- 2.8 apply concept of friction in daily life;
- 2.9 states the principles of moments;
- 2.10 classify simple machines;
- 2.11 apply the principle of fluid mechanics in every-day life;
- 2.12 develop principles of thermal energy in heat manipulation;
and
- 2.13 develop concepts and principles of electricity in maintaining
and repairing appliances.

3.0 GENERAL COMPETENCES

The assessment will measure the students' ability to:

- 3.1 apply properties of matter in daily life;
- 3.2 make appropriate measurements of physical quantities;
- 3.3 use different types of forces in daily life;
- 3.4 apply the effects of motion in the operations of machines;

- 3.5 apply phenomena of work, energy and power in daily life;
- 3.6 produce and transmit sound waves;
- 3.7 apply properties of light in life;
- 3.8 apply friction in solving technical problems in daily life;
- 3.9 using principles of moments in daily life;
- 3.10 classify simple machines;
- 3.11 interpret the principle of fluid mechanics in daily life;
- 3.12 develop principles of thermal energy in heat manipulation;
and
- 3.13 integrate concepts and principles of electricity in maintaining
and repairing appliances.

4.0 ASSESSMENT RUBRIC

There will be **one (1)** paper with duration of **2:30** hours. The paper will consist of sections A, B and C with a total of **ten (10)** questions. The students will be required to answer **all** questions in each section. The paper will weigh a total of **100** marks.

Section A will comprise of **two (2)** objective questions set from various topics of the syllabus. Question 1 will consist of **ten (10)** multiple-choice items. The students will be required to choose the correct answer from the alternatives given. Each item will carry **one (1)** mark, making a total of **ten (10)** marks. Question 2 will be matching items with **five (5)** items. Each item will carry **one (1)** mark, making a total of **five (5)** marks. Therefore, the section will weigh a total of **15** marks.

Section B will consist of **seven (7)** short answer questions each carrying **ten (10)** marks. The section will weigh a total of **70** marks.

Section C will consist of **one (1)** structured question which will carry **15** marks.

5.0 ASSESSMENT CONTENT

The assessment will be set from the following topics:

- 5.1 Introduction to engineering science
- 5.2 Measurements
- 5.3 Measuring instruments
- 5.4 Forces: (Part one)
- 5.5 Properties of matter
- 5.6 Linear motion
- 5.7 Work, energy and power
- 5.8 Sound waves: (Part one)
- 5.9 Light (Optics): (Part one)
- 5.10 Friction
- 5.11 Turning forces
- 5.12 Simple machines: (Part one)
- 5.13 Fluid mechanics
- 5.14 Heat (Part one)
- 5.15 Heat (Part two)
- 5.16 Electricity

035 Engineering Science Table of Specification

S/N	Topics	Skills to be Tested					Number of Items	Percentage Weight per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating		
1	Introduction to engineering science and Measurements & measuring instruments						1	5.3
2	Forces: (Part one)						1	5.3
3	Properties of matter						1	5.3
4	Linear motion						2	10.5
5	Work, energy and power						1	5.3
6	Sound waves: (Part one)						1	5.3
7	Light (Optics): (Part one)						1	5.3
8	Friction						1	5.3
9	Turning forces						1	5.3
10	Simple machines: (Part one)						1	5.3
11	Fluid mechanics						2	10.5
12	Heat (Part one and two)						3	15.7
13	Electricity						3	15.6
Total Number of Items							19	
Total Percentage Weight								100

050 HOME ECONOMICS

1.0 INTRODUCTION

This Home Economics format replaces the Food and Nutrition and Textiles and Dressmaking formats of 2015 issued by National Examinations Council of Tanzania. The aim of preparing this format is to accommodate the changes made in the 2019 Home Economics syllabus issued by Ministry of Education, Science and Technology. Changes made include the shift from content based to competence based approach, merging of the three subjects, namely Home Management, Food and Nutrition and Textiles and Dressmaking to form one subject; hence leading to change the subject name. Other changes are combining of the related topics, removing of some topics/sub topics, addition of topics/sub topics, and shifting of some topics/subtopics from one level to another. With these changes, the new format emphasises on the competence based approach.

2.0 GENERAL OBJECTIVES

The assessment intends to test the extent to which the students are able to:

- 2.1 state the rules for demonstrating good manners and good grooming accepted in the family and community;
- 2.2 explain procedures of caring for a house and its compound (surroundings) as well as household furnishing;
- 2.3 show the skills of planning a kitchen, using kitchen equipment and managing kitchen hygiene and safety;
- 2.4 analyse appropriate uses and care of various sewing equipment;
- 2.5 describe the procedures for working various types of stitches;
- 2.6 demonstrate skills of laundry processes and caring for garments and household articles;
- 2.7 describe the importance of food nutrients in planning balanced meal;
- 2.8 show the skills of conserving nutrient contents when cooking foods using various methods of cooking; and
- 2.9 analyse matters concerning maternal and child health.

3.0 GENERAL COMPETENCES

The assessment will measure the students' ability to:

- 3.1 apply the rules to demonstrate good manners and grooming which are accepted in the family and community;
- 3.2 apply skills of managing house and its compound (surroundings) as well as household furnishing;
- 3.3 demonstrate skills of planning a kitchen, using kitchen equipment and managing kitchen hygiene;
- 3.4 demonstrate appropriate uses and care of various sewing equipment;
- 3.5 demonstrate the steps of working various types of stitches;
- 3.6 apply laundry principles and processes on care of garments and household articles;
- 3.7 apply the concept of food and nutrition in planning balanced meal;
- 3.8 conserve nutrient contents when cooking foods using various methods of cooking; and
- 3.9 apply knowledge and skills in caring for mother and child health.

4.0 ASSESSMENT RUBRIC

There will be **one (1)** theory paper with duration of **2:30** hours. The paper will consist of **ten (10)** questions in sections A, B and C. Students will be required to answer **all** the questions in each section. The paper will weigh a total of **100** marks.

Section A will comprise of **two (2)** objective questions set from various topics of the syllabus. Question 1 will consist of **ten (10)** multiple-choice items. The students will be required to choose the correct answer from the alternatives given. Each item will carry **one (1)** mark, making a total of **ten (10)** marks. Question 2 will be matching items with **five (5)** items. Each item will carry **one (1)** mark, making a total of **five (5)** marks. Therefore, the section will weigh a total of **15** marks.

Section B will consist of **seven (7)** short answer questions. Each question will weigh **ten (10)** marks, making a total of **70** marks.

Section C will consist of **one (1)** essay question. The question will carry **15** marks.

5.0 ASSESSMENT CONTENT

The following topics will be assessed:

- 5.1 Introduction to home economics
- 5.2 Good manners and good grooming
- 5.3 An ideal house
- 5.4 Sanitation in the house
- 5.5 The kitchen
- 5.6 Introduction to sewing
- 5.7 Basic sewing stitches
- 5.8 Laundry
- 5.9 Food and nutrition
- 5.10 Cooking food
- 5.11 Maternal and child health

050 Home Economics Table of Specification

S/N	Topics	Skills to be Tested						Number of Items	Percentage Weight per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating	Creating		
1	Introduction to Home Economics/ Good manners and good grooming							1	5.3
2	An ideal house							2	10.5
3	Sanitation in the house							2	10.5
4	The kitchen							2	10.6
5	Introduction to sewing							2	10.5
6	Basic sewing stitches							2	10.5
7	Laundry							2	10.5
8	Food and nutrition							2	10.5
9	Cooking food							2	10.5
10	Maternal and child health							2	10.6
Total Number of Items								19	
Total Percentage Weight									100

071 BUILDING CONSTRUCTION

1.0 INTRODUCTION

This assessment format is a revised version of the 2017 format issued by National Examinations Council of Tanzania. The revised format is based on Civil Engineering syllabus for Technical Secondary Schools (Form I – IV) issued in 2019 by the Ministry of Education, Science and Technology. The changes made in this format is the addition of new topics and removal of some contents in order to comply with the requirements of the new syllabus. Generally, the format emphasises on applying the competence based assessment approach.

2.0 GENERAL OBJECTIVES

The assessment will test the extent to which students are able to:

- 2.1 distinguish the diversity of jobs according to economic sectors, as well as work settings and form of activities in building construction works;
- 2.2 describe the roles and importance of building construction skills in a society;
- 2.3 identify building construction workshops as related to other workshops;
- 2.4 describe safety management's rules and procedures related to building construction works/site;
- 2.5 identify tools, equipment and materials used in building construction work;
- 2.6 describe different types of measuring instruments used in building construction works/site;
- 2.7 explain how to carry out building construction site preparation;
- 2.8 describe how to build foundation and walls for simple buildings;
- 2.9 explain how to prepare concrete for simple building construction works and
- 2.10 describe how to erect temporary supports for building construction works.

3.0 GENERAL COMPETENCIES

The assessment will test students' ability to:

- 3.1 explore socio-economic factors related to building construction;
- 3.2 make considerations using building construction as a study career;
- 3.3 apply safety management skills in building construction works;
- 3.4 use effectively different types of measuring tools in building construction works;
- 3.5 carry out site preparation for building construction;
- 3.6 build foundation and walls for simple buildings;
- 3.7 erect temporary supports for building construction works;
- 3.8 prepare concretes and
- 3.9 identify types of bricks, blocks/mortar and their manufacturing processes.

4.0 ASSESSMENT RUBRIC

There will be **one (1)** theory paper with duration of **2:30** hours. The paper will consist of **ten (10)** questions in sections A, B and C. Students will be required to answer **all** the questions in each section. The paper will weight a total of **100** marks.

Section A will comprise of **two (2)** questions. Question 1 will consist of **ten (10)** multiple choice items. The students will be required to choose the correct answer from the alternatives given. Each item will carry **one (1)** mark, making a total of **ten (10)** marks. Question 2 will be a matching items with **five (5)** items. Each item will carry **one (1)** mark, making a total of **five (5)** marks. Therefore the section will weigh a total of **15** marks.

Section B will comprise of **seven (7)** short-answer questions. Students will be required to answer **all** the questions. Each question will weigh **ten (10)** marks, making a total of **70** marks.

Section C will consist of **one (1)** structured question, weighting **15** marks.

5.0 ASSESSMENT CONTENT

The following topics will be tested:

- 5.1 Workshop orientation
- 5.2 Building construction, science and technology
- 5.3 Construction workshop practice
- 5.4 Introduction to building construction
- 5.5 Building construction, site analysis
- 5.6 Building materials and Workshop practice
- 5.7 Masonry works and Workshop practice
- 5.8 Foundation setting out and Workshop practice
- 5.9 Wall and Workshop practice
- 5.10 Temporary support

071 Building Construction Table of Specification

S/N	Topics	Skills to be Tested						Number of Items	Percentage Weight per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating	Creating		
1	Workshop orientation							1	5.3
2	Building construction, science and technology and Construction workshop practice							2	10.5
3	Introduction to building construction							1	5.3
4	Building construction, site analysis							1	5.3
5	Building materials and Workshop practice							5	26.3
6	Masonry works and Workshop practice							1	5.3
7	Foundation setting out and Workshop practice							3	15.7
8	Wall and Workshop practice							4	21.0
9	Temporary support							1	5.3
Total Number of Items								19	
Total Percentage Weight									100

072 ARCHITECTURAL DRAUGHTING

1.0 INTRODUCTION

This assessment format is a revised version of the 2017 format issued by National Examinations Council of Tanzania. The revised format is based on 2019 Civil Engineering syllabus for Technical Secondary Schools (Form I – IV) issued by the Ministry of Education, Science and Technology. The changes made in this format are the addition of new topics and removal of some contents in order to comply with the requirements of the new syllabus. Generally, the format emphasises on applying the competence based assessment approach.

2.0 GENERAL OBJECTIVES

The assessment will test the extent to which students are able to:

- 2.1 investigate the diversity of jobs in economic sectors, as well as work settings and form of activities in Architectural field;
- 2.2 explain the roles, duties and importance of Architect in the society;
- 2.3 conceptualize studio as related to Architectural draughting;
- 2.4 explain safety management rules and procedures applied in architectural draughting studios;
- 2.5 identify and use tools, equipment and materials used in architectural draughting studios;
- 2.6 explain different types of measuring instruments used in documenting Architectural works;
- 2.7 construct Architectural/Technical geometrical figures;
- 2.8 demonstrate basic primary elements of designing i.e. point, lines, plane and volume;
- 2.9 construct Architectural figures by integrating straight and curved lines;
- 2.10 identify scales, equipment, drawing convention, dimensions, symbols and letterings used in producing basic Architectural drawings (schematic drawings);

- 2.11 demonstrate various types of projections that are used to create pictorial images of the building for presentation purposes; and
- 2.12 develop perspective drawings by conventional method.

3.0 GENERAL COMPETENCIES

The assessment will measure the students' ability to:

- 3.1 explore socio-economic factors in building industry for their own careers;
- 3.2 make considerations for the elective professional field and study choices for their own future careers;
- 3.3 apply safety management in architectural studios and in different engineering workshops;
- 3.4 use different types of drawing tools effectively in Architectural draughting;
- 3.5 use basic knowledge of lines and angles to draw geometrical figures.
- 3.6 construct Architectural /Technical geometrical figures;
- 3.7 construct basic primary elements of designing i.e. point, lines, plane and volume;
- 3.8 construct the Architectural figures by integrating straight and curved lines;
- 3.9 describe different scales types and their purposes, various equipment, drawing convention, dimensions, and lettering that are used to produce basic Architectural drawings (schematic drawings);
- 3.10 describe the principles and types of projections that are used to create pictorial images of buildings for presentation purposes; and
- 3.11 describe the conventional methods to construct perspective drawings.

4.0 ASSESSMENT RUBRIC

There will be **one (1)** paper with duration of **2:30** hours. The paper will consist of **seven (7)** questions in sections A, B and C. Students will be required to answer **all** the questions in each section. The paper will weigh a total of **100** marks.

Section A will comprise of **two (2)** questions. Question 1 will consist of **ten (10)** multiple-choice items. The students will be required to choose the correct answer from the alternatives given. Each item will weigh **one (1)** mark, making a total of **ten (10)** marks. Question 2 will consist of **five (5)** matching items. Each item will weigh **one (1)** mark, making a total of **five (5)** marks. This section will carry a total of **15** marks.

Section B will consist of **three (3)** short answer questions. Each question will carry **15** marks, making a total of **45** marks.

Section C will comprise **two (2)** structured questions. Each question will carry **twenty (20)** marks, making a total of **40** marks.

5.0 ASSESSMENT CONTENT

The following topics will be tested:

- 5.1 Architectural draughting
- 5.2 Architectural draughting and occupational information
- 5.3 Instruments/Equipment and materials
- 5.4 Lettering
- 5.5 Layout of the drawing paper or paper formatting
- 5.6 Blending of straight lines and curves
- 5.7 Geometrical figures
- 5.8 Dimensions
- 5.9 Scales
- 5.10 Orthographic projection
- 5.11 Points, lines and planes in space
- 5.12 Auxiliary views
- 5.13 Pictorial drawing
- 5.14 Perspective drawing

072 Architectural Draughting Table of Specification

S/N	Topics	Skills to be Tested						Number of Items	Percentage Weight per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating	Creating		
1	Architectural draughting and occupational information							1	6.3
2	Instruments/Equipment and materials							2	12.5
3	Lettering, dimensions and scales							3	18.5
4	Layout of the drawing paper or paper formatting							1	6.3
5	Geometrical figures, blending of straight lines and curves							2	12.5
6	Orthographic projection							2	12.5
7	Points, lines and planes in space							1	6.3
8	Auxiliary views							1	6.3
9	Pictorial drawing							2	12.5
10	Perspective drawing							1	6.3
Total Number of Items								16	
Total Percentage Weight									100

073 CIVIL ENGINEERING SURVEYING

1.0 INTRODUCTION

This format is a revised version of the 2017 format issued by National Examinations Council of Tanzania. The revised format is based on 2019 Civil Engineering syllabus for Technical Secondary Schools (Form I-IV) issued by the Ministry of Education, Science and Technology. This format addresses changes made in the new syllabus such as addition of new topics and removal of some contents in order to comply with the requirements of the syllabus. The format emphasises on applying the competence based assessment approach.

2.0 GENERAL OBJECTIVES

The assessment will test the extent to which students are able to:

- 2.1 explain various types of surveying branches including their functions;
- 2.2 explain the duties of Construction Field Surveyor in construction works;
- 2.3 perform surveying practice on the field;
- 2.4 use surveying tools and equipment in surveying practices;
- 2.5 explain safety management rules and procedures for safety of Surveyor and surveying equipment and tools;
- 2.6 use basic surveying knowledge, skills and principles in performing Construction Field works;
- 2.7 use chain surveying tools in performing chain surveying and other fieldwork;
- 2.8 perform surveying documentation on the various area; and
- 2.9 conduct surveying work on both cleared sites and sites which have the obstacles.

3.0 GENERAL COMPETENCIES

The assessment will test student ability to:

- 3.1 describe various types of surveying branches including their functions;

- 3.2 explain the duties of Construction Field Surveyor in construction works;
- 3.3 control surveying work at the site;
- 3.4 handle and maintain surveying tools and equipment;
- 3.5 apply surveying safety managements well for both personal and equipment safety;
- 3.6 apply basic knowledge, skills and principles in using chain surveying tools in performing chain survey, fieldwork and plotting;
- 3.7 assemble, set and use various surveying equipment in surveying practices;
- 3.8 perform surveying monumentation on the various area; and
- 3.9 conduct surveying work on both cleared sites and sites which have the obstacles.

4.0 ASSESSMENT RUBRIC

There will be **one (1)** theory paper with duration of **2:30** hours. The paper will consist of **ten (10)** questions in sections A, B and C. Students will be required to answers **all** the questions in each section. The paper will weigh a total of **100** marks.

Section A will comprise of **two (2)** questions. Question 1 will consist of **ten (10)** multiple-choice items. The students will be required to choose the correct answer from the alternatives given. Each item will carry **one (1)** mark, making a total of **ten (10)** marks. Question 2 will be matching items with **five (5)** items. Each item will carry **one (1)** mark, making a total of **five (5)** marks. Therefore the section will weigh a total of **15** marks.

Section B will consist of **seven (7)** short answer questions each carrying **ten (10)** marks. This section will weigh a total of **seventy (70)** marks.

Section C will consist of **one (1)** structured question, weighing **15** marks.

5.0 ASSESMENT CONTENT

The following topics will be assessed:

- 5.1 Introduction to civil engineering surveying
- 5.2 Civil engineering surveyor
- 5.3 Surveying practice
- 5.4 Surveying tools and equipment
- 5.5 Safety management and rules
- 5.6 Introduction to surveying methods
- 5.7 Chain surveying and linear measurement
- 5.8 Compass surveying
- 5.9 Surveying techniques for small areas
- 5.10 Surveying techniques (practice)
- 5.11 Surveying techniques for small areas (practice)

073 Civil Engineering Surveying Table of Specification

S/N	Topics	Skills to be Tested						Number of Items	Weight Percentage per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating	Creating		
1	Introduction to civil engineering surveying							1	5.3
2	Civil engineering surveyor							1	5.3
3	Survey practice							1	5.3
4	Surveying tools and equipment							1	5.3
5	Safety management and rules							1	5.3
6	Introduction to surveying methods							1	5.3
7	Chain survey and linear measurement							6	31.5
8	Compass surveying							3	15.7
9	Surveying techniques for small areas							1	5.3
10	Survey techniques practice							2	10.4
11	Surveying techniques for small areas practice							1	5.3
Total Number of Items								19	
Total Percentage Weight									100

074 WOODWORK AND PAINTING ENGINEERING

1.0 INTRODUCTION

This assessment format is a revised version of the 2017 format issued by National Examinations Council of Tanzania. The revised format is based on 2019 Civil Engineering syllabus for Technical Secondary Schools issued by the Ministry of Education, Science and Technology. This format addresses some changes such as addition of new topics and removal of some contents in order to comply with the requirements of the new syllabus. In light of such changes the format emphasises on applying the competence based assessment approach in order to effectively evaluate the assessment areas.

2.0 GENERAL OBJECTIVES

The assessment will test the extent to which students are able to:

- 2.1 explain the importance of woodwork and painting engineering field in a society;
- 2.2 identify woodwork and painting workshops as related to other workshops;
- 2.3 use tools, machine and equipment properly in woodwork and painting engineering workshop;
- 2.4 practice safety rules and managements in woodwork and painting workshop;
- 2.5 identify, select painting materials and tools to perform various projects i.e., different surface finishing;
- 2.6 explain painting terms, selecting appropriate colours, use concept of colour circle (colour mixing);
- 2.7 identify tools and surface use stencil and templates for lettering;
- 2.8 use different paints to conduct surface finishing;
- 2.9 use different paints to paint various surfaces;
- 2.10 identify colour and materials for tie and dying and design different tie and dye materials;
- 2.11 conduct painting techniques for surface finishing including application of spraying equipment;

- 2.12 use stencils and templates, prepare surface for lettering and tracing of objects; and
- 2.13 prepare surfaces for painting and apply painting techniques.

3.0 GENERAL COMPETENCIES

The assessment will test student ability to:

- 3.1 explain the importance of woodwork and painting engineering field;
- 3.2 identify the necessary elements of woodwork and painting engineering workshop;
- 3.3 identify tools and equipment used in woodwork and painting engineering workshop;
- 3.4 apply safety rules and management skills in woodwork and painting workshop;
- 3.5 apply painting materials and tools in performing various projects i.e. different surface finishing;
- 3.6 analyse various types of colour and mix colour using colour circles;
- 3.7 prepare surface and use stencil and templates for lettering;
- 3.8 apply paints for surface finishing;
- 3.9 analyse and use different paints to paint various surfaces;
- 3.10 design tie and dyeing;
- 3.11 apply painting techniques for surface finishing including application of spraying equipment;
- 3.12 use stencils and templates, prepare surface for lettering and tracing of objects; and
- 3.13 prepare surfaces for painting and apply painting techniques.

4.0 ASSESSMENT RUBRIC

There will be **one (1)** theory paper with duration of **2:30** hours. The paper will consist of **ten (10)** questions in sections A, B and C. Students will be required to answer **all** the questions in each section. The paper will weigh a total of **100** marks.

Section A will comprise of **two (2)** questions. Question 1 will consist of **ten (10)** multiple-choice items. The students will be required to

choose the correct answer from the alternatives given. Each item will carry **one (1)** mark, making a total of **ten (10)** marks. Question 2 will be a matching items with **five (5)** items. Each item will carry **one (1)** mark, making a total of **five (5)** marks. Therefore the section will weigh a total **15** marks.

Section B will comprise of **seven (7)** short answer questions. Each question will weigh **ten (10)** marks, making a total of **70** marks.

Section C will consist of **one (1)** structured question, weighting **fifteen (15)** marks.

5.0 ASSESMENT CONTENT

The following topic will be assessed:

- 5.1 Introduction to painting
- 5.2 Workshop orientation
- 5.3 Safety rules and management
- 5.4 Painting materials
- 5.5 Color
- 5.6 Water paints
- 5.7 Tie and dying
- 5.8 Spraying and spray equipment
- 5.9 Sign writing and stencilling
- 5.10 Oil paint
- 5.11 Functional requirement of paints
- 5.12 Painting techniques
- 5.13 Varnishes and finishes

074 Woodwork and Painting Engineering Table of Specification

S/N	Topics	Skills to be Tested						Number of Items	Weight Percentage per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating	Creating		
1	Introduction to painting							2	10.5
2	Workshop orientation							2	10.5
3	Safety rules and management							2	10.5
4	Painting materials							3	15.7
5	Colour							1	5.3
6	Water paints							3	15.7
7	Tie and dying							1	5.3
8	Spraying and spraying equipment, sign writing and stencilling							1	5.3
9	Oil paint							1	5.3
10	Functional requirement of paints							1	5.3
11	Painting techniques							1	5.3
12	Varnishes and finishes							1	5.3
Total Number of Items								19	
Total Percentage Weight									100

080 ELECTRICAL ENGINEERING

1.0 INTRODUCTION

This Electrical Engineering assessment format is a revised version of the 2017 format issued by National Examinations Council of Tanzania. The revised format is based on 2019 Electrical Engineering syllabus for Technical Secondary Schools issued by the Ministry of Education, Science and Technology. This format addresses some changes such as additional of new topics and removal of some contents in order to comply with the requirements of the new syllabus. Generally, the new format emphasises on applying the competence-based assessment approach rather than content-based mode.

2.0 GENERAL OBJECTIVES

The assessment will test the extent to which the students are able to:

- 2.1 perform required maintenance and services to improve performance in industry and other economic sectors;
- 2.2 provide some of the needed services in entrepreneurship and business management;
- 2.3 install electric machines (transformers, DC and AC motors and generators);
- 2.4 draw electrical installation layout from a given house plan;
and
- 2.5 apply various wiring systems in domestic and industrial installations.

3.0 GENERAL COMPETENCES

The assessment will measure the student's ability to:

- 3.1 identify the appropriate hand tools for specific jobs in Electrical Engineering;
- 3.2 demonstrate knowledge of domestic and industrial installation using different wiring systems;
- 3.3 draw electrical installation layout from a given house plan;

- 3.4 apply basic skills in installing electric machines (transformers, DC and AC motors and generators); and
- 3.5 use basic skills for rewinding AC motors.

4.0 ASSESSMENT RUBRIC

There will be **one (1)** paper with duration of **2:30** hours. This paper will consist of **ten (10)** questions in sections A, B and C. The students will be required to answer **all** questions in each section. The paper will weigh a total of **100** marks.

Section A will consist of **two (2)** questions. Question 1 will be a multiple choice with **ten (10)** items. The students will be required to choose the correct answer from the alternatives given. Each item will weigh **one (1)** mark, making a total of **ten (10)** marks. Question 2 will be matching items comprised of **five (5)** items. Each item will carry **one (1)** mark, making a total of **five (5)** marks. Therefore, this section will weigh a total of **15** marks.

Section B will consist of **seven (7)** short answer questions each carrying **ten (10)** marks. This section will weigh a total of **70** marks.

Section C will consist of **one (1)** structured question, weighting **15** marks.

5.0 ASSESSMENT CONTENT

The following topics will be assessed:

- 5.1 Electrical engineering science and technology
- 5.2 Electrical workshop orientation
- 5.3 Electrical draughting
- 5.4 Workshop practice
- 5.5 Electricity
- 5.6 Units
- 5.7 D.C Circuits
- 5.8 Instrumentations and measurements
- 5.9 Cells and batteries
- 5.10 Magnetism and electro-magnetism

080 Electrical Engineering Table of Specification

S/N	Topics	Skills to be Tested						Number of Items	Percentage Weight per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating	Creating		
1	Electrical engineering science and technology							1	5.3
2	Electrical workshop orientation							1	5.3
3	Electrical draughting							3	15.8
4	Workshop practice							2	10.5
5	Electricity							3	15.8
6	Units							1	5.3
7	D.C Circuits							2	10.5
8	Instrumentations and measurements							2	10.5
9	Cells and batteries							2	10.5
10	Magnetism and electro-magnetism							2	10.5
Total Number of Items								19	
Total Percentage Weight									100

081 ELECTRONICS AND COMMUNICATION ENGINEERING

1.0 INTRODUCTION

This assessment format is a revised version of the 2017 format issued by National Examinations Council of Tanzania. The revised format is based on 2019 Electronics and Communication Engineering syllabus for Technical Secondary Schools issued by the Ministry of Education, Science and Technology. This format addresses some changes such as additional of new topics and removal of some contents in order to comply with the requirements of the new syllabus. Generally, the new format emphasises on applying the competence-based assessment approach rather than content-based mode.

2.0 GENERAL COMPETENCES

The assessment will test the extent to which students are able to:

- 2.1 explain the duties and importance of Electronics and Communication Engineering in a society;
- 2.2 explain safety management, rules and procedures;
- 2.3 identify tools, equipment and materials used in electronics and Communication Engineering workshop;
- 2.4 describe different types of measuring instruments and test equipment;
- 2.5 identify electronic components and express their values;
- 2.6 describe the characteristics of solid-state devices and various methods of measuring them;
- 2.7 present electronic systems by using diagrams; and
- 2.8 assemble and test common household electronic systems.

3.0 GENERAL COMPETENCES

The assessment will measure students' ability to:

- 3.1 perform duties of Electronics and Communication Engineering in a society;
- 3.2 adhere to safety management rules and procedures related to Electronics and Communication Engineering workshop;

- 3.3 identify and apply tools, equipment and materials used in Electronics and Communication Engineering workshop;
- 3.4 demonstrate knowledge on the working characteristics and applications of sold-state devices;
- 3.5 present electronic systems using schematic diagrams;
- 3.6 service common household electronic systems; and
- 3.7 perform measurement of various electrical quantities using measuring instruments and test equipment.

4.0 ASSESSMENT RUBRIC

There will be **one (1)** paper with duration of **2:30** hours. The paper will consist of sections A, B and C with a total of **10** questions. Students will be required to answer **all** questions in each section. The paper will weigh a total of **100** marks.

Section A will comprise **two (2)** questions. Students will be required to answer **all** the questions in this section. Question 1 will consist of **ten (10)** multiple choice items. The students will be required to choose the correct answer from the alternatives given. Each item will carry **one (1)** mark, making a total of **ten (10)** marks. Question 2 will be a matching items comprised of **five (5)** items. Each item will carry **one (1)** mark, making a total of **five (5)** marks. This section will carry a total of **15** marks.

Section B will consist of **seven (7)** short answer questions. Students will be required to answer **all** the questions in this section. Each question will weigh **ten (10)** marks. The section will weigh a total of **70** marks.

Section C will consist of **one (1)** structured question, weighing **15** marks.

5.0 ASSESSMENT CONTENT

The students will be assessed on the following topics:

- 5.1 Electronics engineering occupational information
- 5.2 Safety management and rules
- 5.3 Drawing techniques
- 5.4 Electronics workshop/Laboratory practice I
- 5.5 Electronics drawing
- 5.6 Introduction on electricity
- 5.7 Introduction to measurements and instrumentation
- 5.8 Electronic components
- 5.9 Semiconductors
- 5.10 Semiconductor devices
- 5.11 Electronics workshop practice II

081 Electronics and Communication Engineering Table Specification

S/N	Topics	Skills to be Tested					Number of Items	Percentage Weight per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating		
1	Electronics engineering occupational information						1	5.3
2	Safety management and rules						1	5.3
3	Drawing techniques						2	10.5
4	Electronics drawing						2	10.5
5	Electronics workshop/Laboratory practice						2	10.5
6	Introduction on electricity						1	5.3
7	Introduction to measurements and instrumentation						2	10.5
8	Electronic components						3	15.8
9	Semiconductors						2	10.5
10	Semiconductor devices						3	15.8
Total Number of Items							19	
Total Percentage Weight								100

090 MECHANICAL ENGINEERING

1.0 INTRODUCTION

This assessment format is a revised version of the 2017 format issued by National Examinations Council of Tanzania. The revised format is based on 2019 Electronics and Communication Engineering syllabus for Technical Secondary Schools issued by the Ministry of Education, Science and Technology. This format addresses some changes such as addition of new topics and removal of some contents in order to comply with the requirements of the new syllabus. In light of such changes, the format emphasises on applying the competence based assessment approach.

2.0 GENERAL OBJECTIVES

The assessment will test the extent to which students are able to:

- 2.1 identify engineering jobs according to economic sectors and working settings;
- 2.2 explain the duties and importance of mechanical engineering in a society;
- 2.3 identify and differentiate mechanical engineering workshops as related to other workshops;
- 2.4 explain and apply safety management's rules and procedures in mechanical engineering;
- 2.5 select and use various engineering materials, tools and equipment in performing different engineering tasks;
- 2.6 use proper testing tools and equipment in testing the performance of mechanical engineering machines; and
- 2.7 describe the functions of machines equipment and tools in performing different mechanical engineering tasks.

3.0 GENERAL COMPETENCES

The assessment will measure students' ability to:

- 3.1 explore socio-economic factors as consideration in own subject, career and study choices;

- 3.2 explore ranges of mechanical skills and apply them in mechanical engineering fields;
- 3.3 apply safety management skills in maintaining and serving mechanical engineering system and workshop;
- 3.4 use effectively different types of hand tools and machine tools;
- 3.5 test the performance of machines using proper testing tools and equipment;
- 3.6 use engineering tools, equipment and materials in performing different mechanical engineering tasks; and
- 3.7 show understanding of the functions of machines equipment and tools in performing different mechanical engineering tasks.

4.0 ASSESSMENT RUBRIC

There will be **one (1)** paper with duration of **2:30** hours. The paper will consist of sections A, B and C with a total of **ten (10)** questions. Students will be required to answer **all** questions in each section. The paper will weigh a total of **100** marks.

Section A will consist of **two (2)** questions. Question 1 will consist of **ten (10)** multiple choice items. The students will be required to choose the correct answer from the alternatives given. Each item will carry **one (1)** mark, making a total of **ten (10)** marks. Question 2 will be matching items comprised of **five (5)** items. Each item will carry **one (1)** mark, making a total of **five (5)** marks. This section will carry a total of **15** marks.

Section B will consist of **seven (7)** short-answer questions. Each question will weigh **ten (10)** marks, making a total of **70** marks.

Section C will consist of **one (1)** structured question, weighting **15** marks.

5.0 ASSESSMENT CONTENT

The following topics will be assessed:

- 5.1 Introduction to science, engineering and technology
- 5.2 Mechanical engineering jobs and occupations
- 5.3 Workshop management and safety rules
- 5.4 Workshop tools and equipment
- 5.5 Engineering materials
- 5.6 Metal work technology

090 Mechanical Engineering Table of Specification

S/N	Topics	Skills to be Tested					Number of Items	Percentage Weight per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating		
1	Introduction to science, engineering and technology						2	10.6
2	Mechanical engineering jobs and occupations						3	15.8
3	Workshop management and safety rules						3	15.8
4	Workshop tools and equipment						3	15.8
5	Engineering materials						4	21.0
6	Metal work technology						4	21.0
Total Number of Items							19	
Total Percentage Weight								100

091 ENGINEERING DRAWING

1.0 INTRODUCTION

This format is a revised version of the 2017 Technical Drawing assessment format issued by the National Examinations Council of Tanzania. The revised format is prepared to address the changes of the new Mechanical Engineering syllabus of 2019 issued by the Ministry of Education, Science and Technology. The changes addressed by this format includes the combining of the related topics, removing of some topics/sub topics, shifting of some topics/subtopics from one level to another and changing of the subject name from Technical Drawing to Engineering Drawing. Generally, the format emphasises on applying the competence based assessment approach in effective evaluation of the assessment area.

2.0 GENERAL OBJECTIVES

The assessment intends to assess the extent to which the students are able to;

- 2.1 identify dimension of drawings;
- 2.2 draw views of engineering components; and
- 2.3 identify and make simple engineering joints.

3.0 GENERAL COMPETENCES

The assessment will measure the students' ability to:

- 3.1 draw views of engineering components; and
- 3.2 make simple engineering joints.

4.0 ASSESSMENT RUBRIC

There will be **one (1)** paper with duration of **2:30** hours. The paper will consist of **seven (7)** questions in sections A and B. The students will be required to answers **all** the questions. The paper will weigh a total of **100** marks.

Section A will consist of **four (4)** short answer questions. Each question will carry **ten (10)** marks, making a total of **40** marks in this section.

Section B will comprise **three (3)** structured questions. Each question will carry **20** marks, making a total of **60** marks in this section.

5.0 ASSESSMENT CONTENT

The following topics will be assessed:

5.1 Engineering Drawing I

- 5.1.1 Introduction to engineering drawing
- 5.1.2 Drawing office tools
- 5.1.3 International Standard Organization (ISO) Sheet Layout and Sketching
- 5.1.4 Construction of geometric figures
- 5.1.5 Similar figures

5.2 Engineering Drawing II

- 5.2.1 Pictorial drawing (Oblique, isometric)
- 5.2.2 Scales
- 5.2.3 Dimensioning and symbols
- 5.2.4 Free hand sketching
- 5.2.5 Intersections of cylinders

091 Engineering Drawing Table of Specification

S/N	Topics	Skills to be Tested					Number of Items	Percentage Weight per Topic
		Remembering	Understanding	Applying	Analysing	Evaluating		
1	Construction of geometric figures, Scale and Dimensioning and symbols						2	28.6
2	Similar figures and Drawing office tools						1	14.2
3	Pictorial drawing (Oblique, Isometric)						2	28.6
4	Free hand sketching and International Standard Organization (ISO) sheet layout and sketching.						1	14.3
5	Intersections of cylinders						1	14.3
Total Number of Items							7	
Total Percentage Weight								100

