

073206T4ARC

ARCHITECTURAL TECHNOLOGY LEVEL 6

CON/CU/ARC/CR/03/6/A

Produce Architectural Models

July/August 2024



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

WRITTEN ASSESSMENT

Time: 3 HOURS

INSTRUCTIONS TO CANDIDATE

1. Marks for each question are indicated in the brackets ().
2. The paper consists of **TWO** sections: **A & B**.
3. Do not write on the question paper.
4. A separate answer booklet is provided.

**This paper consists of THREE (3) printed pages
Candidates should check the question paper to ascertain that all
pages are printed as indicated and that no questions are missing.**

SECTION A (40 MARKS)

Answer ALL the questions in this section.

1. Define the following terms: (6 Marks)
 - a. Schematic model.
 - b. Demountable model.
 - c. Detailed model.
2. When cutting architectural models, safety is paramount to prevent accidents and ensure a smooth and efficient workflow. State FIVE practices that improve safety while cutting materials for an architectural model. (5 Marks)
3. Presentation drawings in architecture are essential tools used to convey design concepts, project proposals, and detailed plans to clients, stakeholders, and construction teams. State FOUR computer aided design (CAD) software that can be used to produce presentation drawings. (4 Marks)
4. Define the term rendering as used in preparation of presentation drawings using computer aided design software. (2 Marks)
5. Define the term scale as used in architectural modelling. (2 Marks)
6. Highlight FOUR reasons why architects produce architectural models. (4 Marks)
7. Outline TWO uses of scaled architectural plans in modelling. (2 Marks)
8. A scale rule is a triangular or flat ruler marked with multiple sets of graduations, each corresponding to a different scale. State TWO uses of a scale rule as used in modelling (2 Marks)
9. Cutting is a fundamental process in architectural modeling which requires precision, safety, and the right tools to achieve accurate and clean cuts. Mention FOUR tools that are used for cutting during modelling. (4 Marks)
10. State FIVE tools used for transferring measurements in architectural modelling. (5 Marks)
11. A steel rule is an essential tool in architectural modeling due to its precision and durability State FOUR uses of a steel rule as used in modelling. (4 Marks)

SECTION B (60 MARKS)

Answer any THREE questions from this section.

12. Magnolia Construction, a real estate developer in Kenya, has asked you to train some interns on how to develop architectural models. Explain TEN materials that can be used to develop architectural models and their uses. (20 Marks)
13. In architectural modeling, various types of drawing outputs are essential for accurately representing and communicating design ideas
- a) Describe FOUR drawing outputs used in modelling, that are derived from a schematic sketch. (8 Marks)
 - b) A schematic model in architecture is a preliminary representation of a building or project that focuses on the essential elements and overall design concept without delving into fine details. Outline SIX steps of preparing a schematic model from the client's brief. (12 Marks)
14. A Building Information Modeling (BIM) model is a digital representation of a building or infrastructure project that contains detailed information about its various components.
- a) Describe FIVE components of a BIM Model. (10 Marks)
 - b) Discuss FIVE benefits of BIM. (10 Marks)
15. Both physical and digital architectural models are essential tools in the design process, each offering unique advantages and serving different purposes
- a) Distinguish between a physical model and a digital model (4 Marks)
 - b) Explain FIVE elements present in a detailed model that distinguish it from a physical model. (10 Marks)
 - c) Explain THREE types of physical model (6 Marks)

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