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MODULE II

ELECTRICAL ENGINEERING TECHNOLOGY LEVEL 4, LEVEL 5, LEVEL 6

ENG/OS/EI/CR/01/4/MA

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INSTALL STAND-ALONE SOLAR PV SYSTEMS

May-July 2026

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

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PRACTICAL ASSESSMENT

INSTRUCTIONS TO THE CANDIDATE:

1. This unit of competence shall be assessed in three phases.
2. Each assessment session has the duration included in brackets.
3. The third phase of the assessment shall include a practical session and an oral assessment session.
4. The assessor will take photos and videos as you perform the tasks at critical points during the assessment.
5. Ensure all required resources for the assessment have been provided before beginning the assessment.

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PRACTICAL ASSESSMENT 1 (2 HOURS)

Element covered

1. Apply basic electrical concepts
2. Interpret stand-alone Solar PV Installation drawings
3. Install standalone Solar PV Components.

TASKS

Figure 1 shows a layout of a solar electric installation.

- i. Draw the wiring diagram for the layout
- ii. Install solar PV components in correct sequence using PVC sheathed cable system.

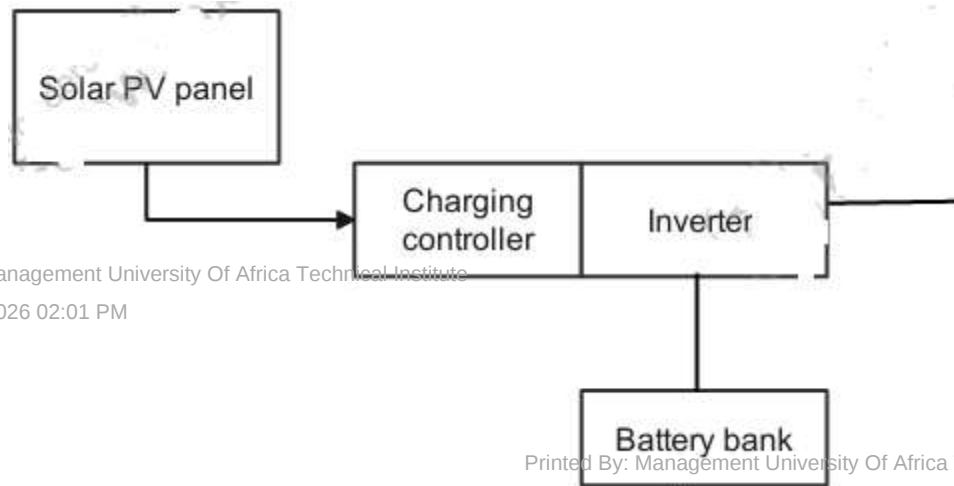


Figure 1

The assessor will proceed to ask you oral questions for 1 hour.

PRACTICAL ASSESSMENT 2 (4 HOURS)

Elements covered

1. Install standalone Solar PV Components.
2. Install electrical wiring system

TASK

Figure 2 shows a house solar PV system layout.

- i. Draw the wiring diagram of the layout such that:

- Solar equipment is connected in the correct sequence

- Fluorescent lamp is controlled from switches S1, S2 and S3
- The socket outlets are connected in radial.

ii. Using PVC sheathed cable system, install the circuit.

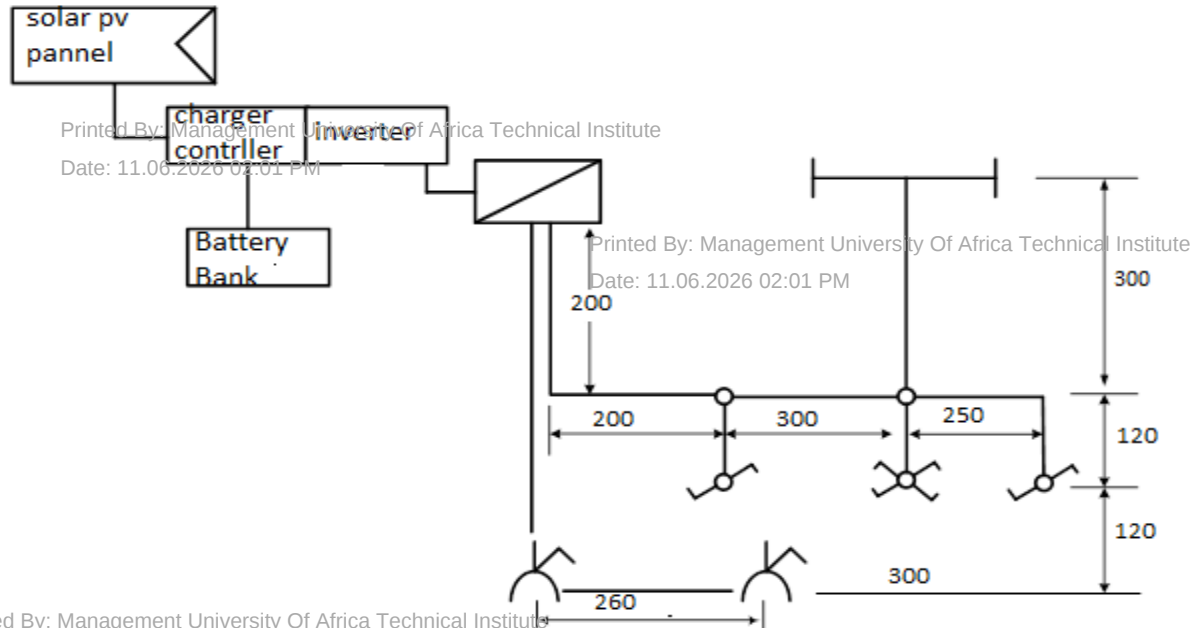


Figure 2

The assessor will proceed to ask you oral questions for 1 hour.

PRACTICAL ASSESSMENT 3 (3 HOURS) AND ORAL ASSESSMENT (1 HOUR)

Element covered

1. Test stand-alone solar PV system installation
2. Maintain stand-alone Solar PV system

TASK

Using the pre-installed circuit in **Figure 3**:

- i. Inspect solar PV system conditions.
- ii. Perform the following tests:
 - Continuity
 - Polarity
 - Earth resistance test
 - Insulation resistance test

iii. Carry out maintenance activities on the installed system.

iv. Power the circuit and test for correct operation.

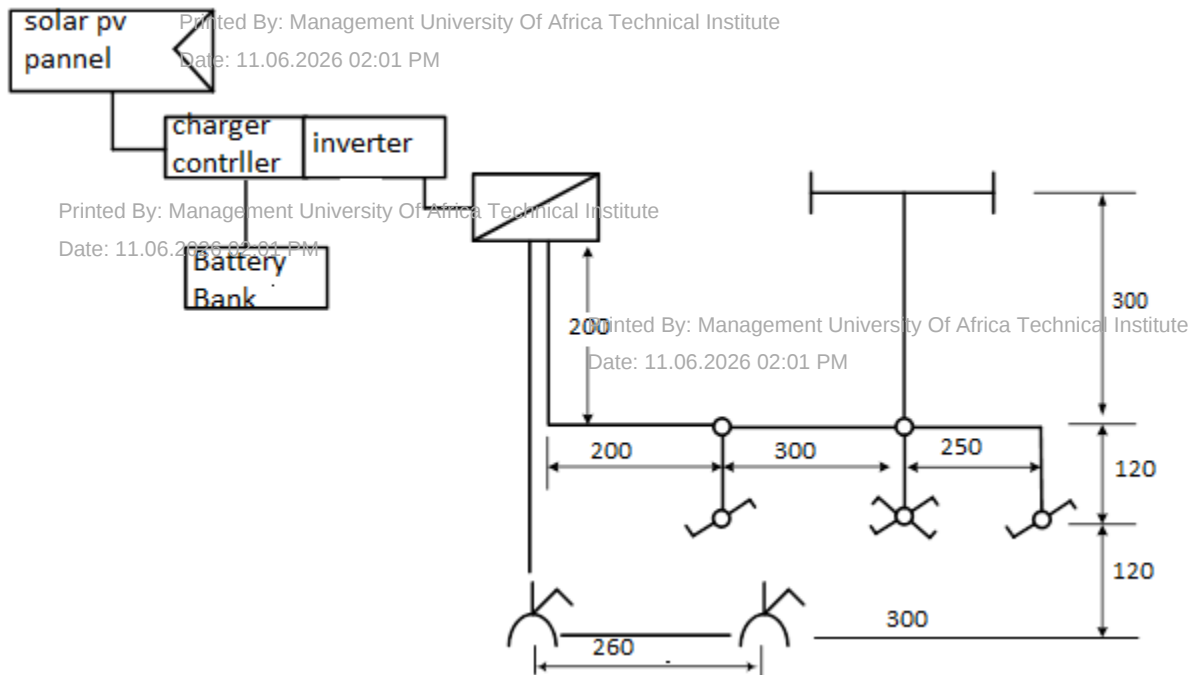


Figure 3

The assessor will proceed to ask you oral questions for 1 hour.