MODULE II

ELECTRICAL INSTALLATION TECHNOLOGY

ENG/OS/EI/CR/01/4/MB

INSTALL STAND-ALONE SOLAR PV SYSTEMS

SEPTEMBER-NOVEMBER 2025

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

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.

PRACTICAL ASSESSMENT 1 (3 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 mini trunking.

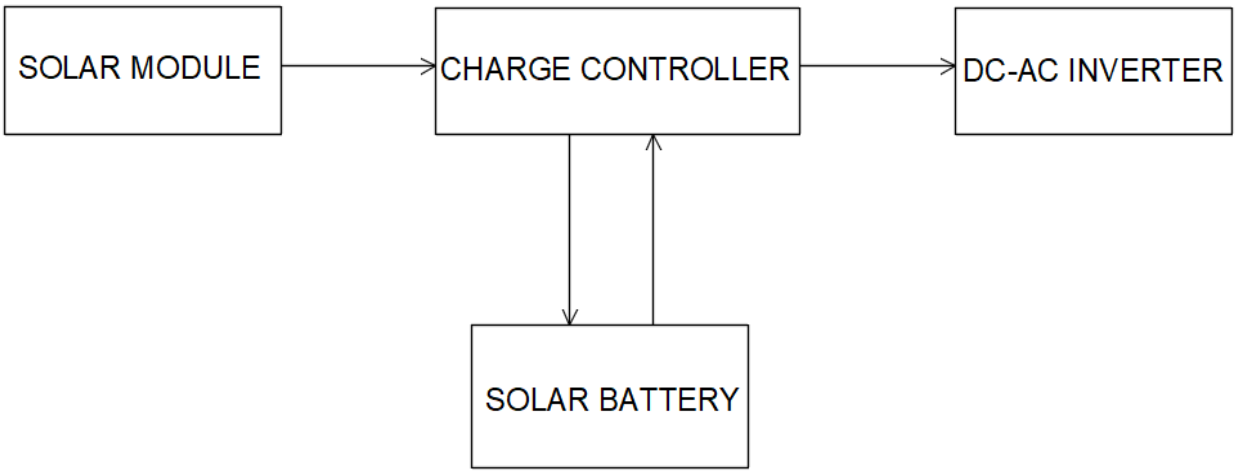

Figure 1

PRACTICAL ASSESSMENT 2 (4 HOURS)

Elements covered

4. Install electrical wiring system

TASK

Figure 2 shows a 12V solar home system layout.

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

- Solar equipment is connected in the correct sequence
- Lamp L_2 and L_3 are controlled by switches S_2 and S_3 from the A.C supply.
- Lamp L_1 is controlled by switch S_1 from the D.C supply.
- The socket is wired in radial.

ii. Using PVC mini trunking system, install the circuit.

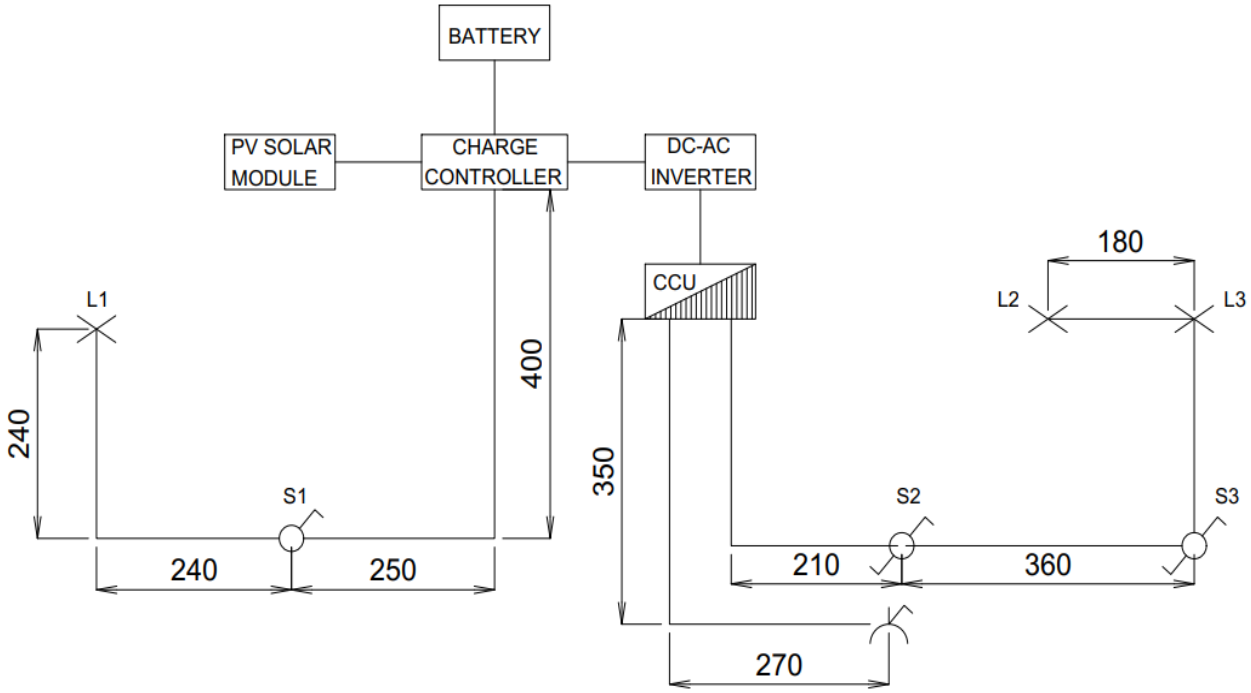

Figure 2

PRACTICAL ASSESSMENT 3 (4 HOURS) AND ORAL ASSESSMENT (1 HOUR)

Element covered

5. Test standalone solar PV system installation
6. 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 and record test results:

- Continuity
- Polarity
- Earth resistance test
- Insulation resistance test

iii. Power the circuit and test for correct operation.

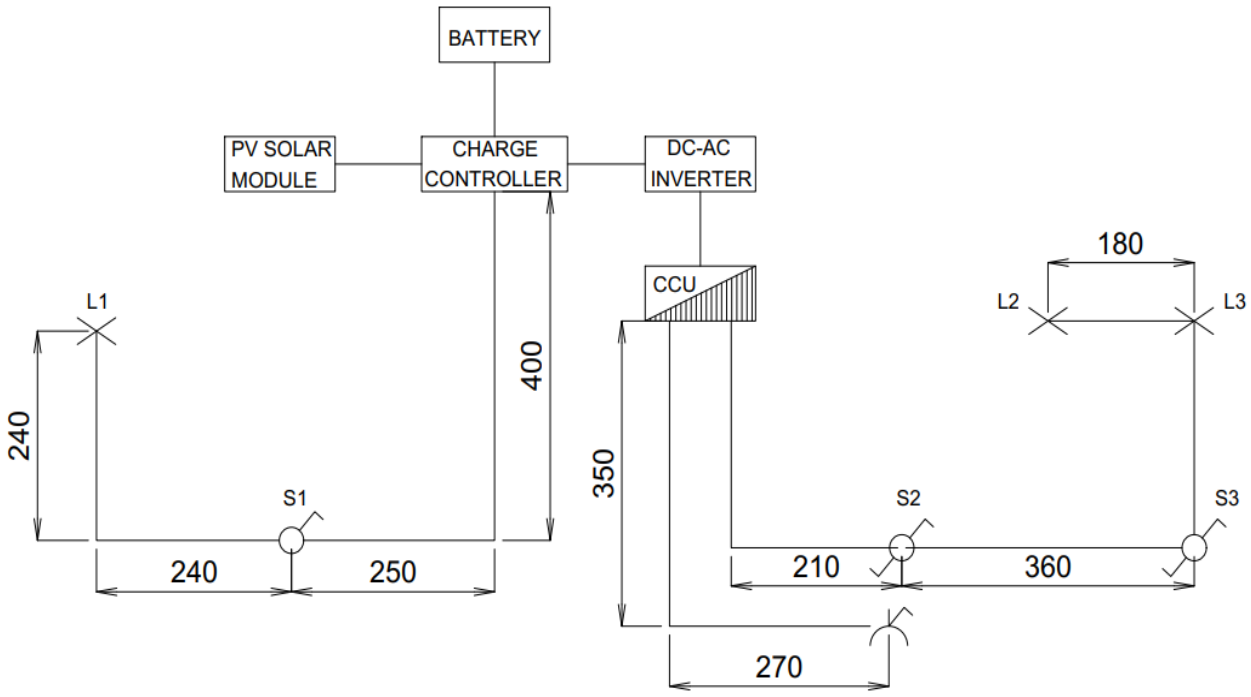

Figure 3

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