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072204T4SPV

SOLAR PV INSTALATION LEVEL 4

ENG/OS/PVI/CR/01/4

Inspect Solar Photovoltaic System Installation Site

July/August 2025

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

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PRACTICAL ASSESSMENT

Time: 4 HOURS

INSTRUCTIONS TO CANDIDATE:

1. A certain site has an average load requirement of 200Wh per day. The solar modules are mounted on the ground adjacent to the workshop. You are required to perform the following tasks:

   TASK 1: Conduct a site inspection for the solar PV system and

   i. Establish and record the total number of panels needed to supply the load.
   ii. Assess and record the shading patterns of the area

   TASK 2: Measure and record

   i. Solar irradiance at the site.
   ii. Light intensity at the site.

TASK 3: Draw a sketch map to capture the following;

i. Panel placement areas
ii. Shading sources in that particular area.
iii. Mounting points for the solar modules, battery, charge controller and inverter.
iv. Wiring system
v. Battery bank
vi. Charge controller
vii. Inverter
viii. Distance between components

TASK 4: Place the solar PV module at a tilt of 30^0 and take measurements of the following parameters;

i. Short circuit current.
ii. Resistance.
iii. Peak voltage
iv. Open circuit voltage

TASK 5: Prepare site survey report to contain:

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i. Safety planning.
ii. Site details and location information
iii. Site conditions
iv. Proposed layout of the solar PV system
v. System measurements
vi. System design and mounting structure
vii. Recommendations for installation

2. You have been provided with the following resources for the practical tasks:

i. 100Watt solar panel
ii. Inclinometer and compass
iii. foolscaps
iv. Lux meter
v. Multi-meter
vi. Measuring tape
vii. Charge controller
viii. Battery
ix. inverter