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072203T4SPV

SOLAR PV INSTALLATION LEVEL 3

ENG/OS/SPV/CR/03/3

Install Solar PV system

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. You are allocated 4 hours to carry out all the practical tasks
2. Do not write on the question paper
3. **DO NOT** switch ON the power without assessor's permission

PRACTICAL TASKS

Figure 1 shows the layout diagram of a **Solar PV System** where **So_1** is a switched socket outlet in a radial connection. Lighting point **L_2** is controlled simultaneously from both switching points **S_1** and **S_2** while lighting point **L_1** is controlled only by switch **S_1**.

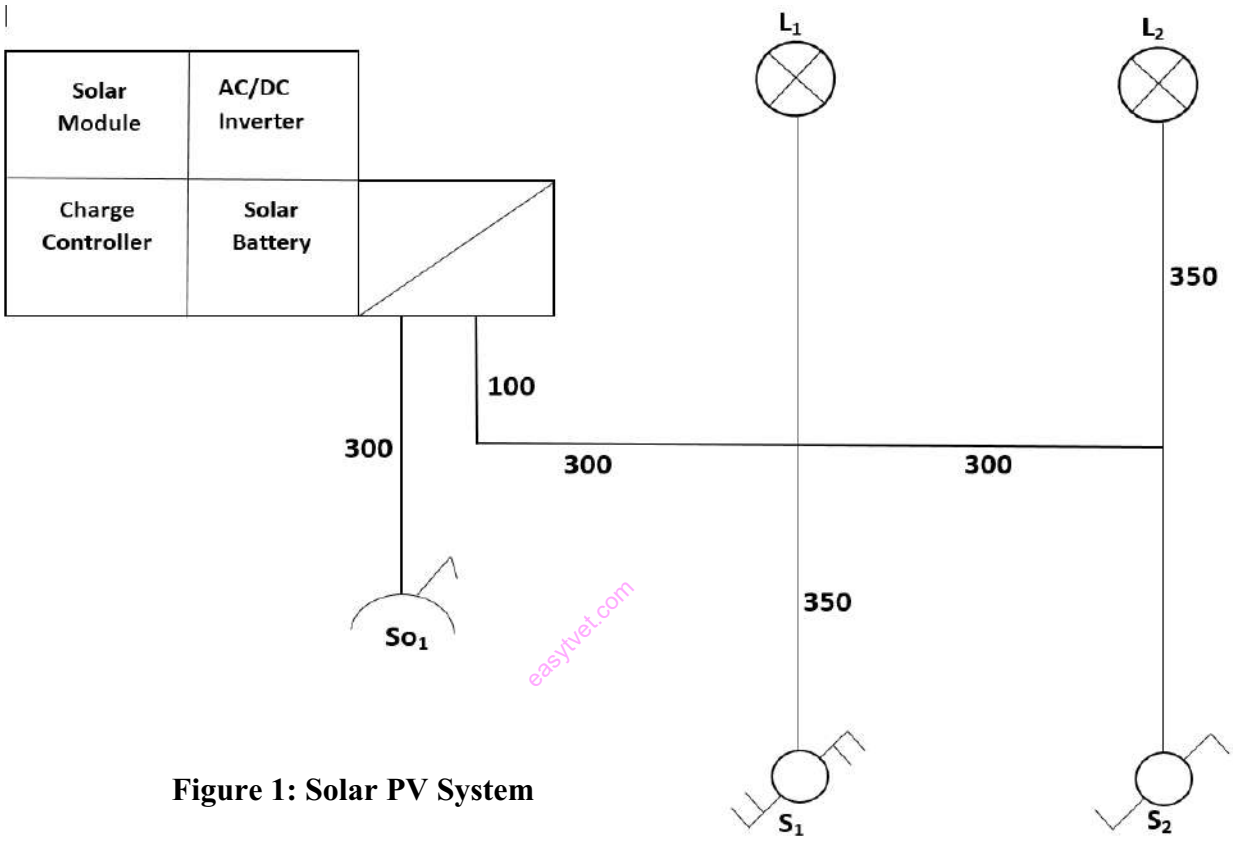


Figure 1: Solar PV System

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1. You are required to perform the following tasks

TASK 1:

(a) Draw the wiring diagram of the solar system showing all the components.

TASK 2:

(a) With the use of P.V.C minitrunking, install the circuit on the board provided such that the solar PV components are wired in accordance with IEE regulations.

(b) Conduct the following tests on the installed circuit:

i. Continuity test
ii. Polarity test

(b) Conduct the following component tests;

i. Solar battery voltage

ii. Current output

iii. Continuity test for the earth terminal at the socket outlet **So_1**.

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

50W solar module	Battery crocodile clips, R/B
50Ah solar battery	1 inch gypsum screws
10/20A charge PWM controller	1.5mm2 single live cable
300W inverter	1.5mm2 single neutral cable
Complete 4-way CCU	2.5mm2 single live cable
1 gang 2-way switch	2.5mm2 single neutral cable
2 gang 2-way switch	2.5mm2 single earth cable
Two straight batten lamp holders	4.0mm2 single live cable
Two 10V/5W lamp	4.0mm2 single neutral cable
20A plastic socket outlet	4.0mm2 single earth cable
Two shallow single pattress boxes	Spirit level
One shallow double pattress boxes	Engineer's knife
Installation board (1.5m x 1.5m)	Cable stripper
Insulation tape (Black, Red, Green)	Multimeter

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