



MURANG'A UNIVERSITY COLLEGE

(A Constituent College of Jomo Kenyatta University of Agriculture and Technology)

DEPARTMENT: ELECTRICAL ENGINEERING

LEVEL: CERTIFICATE
CLASS: MRUC/EE/P/14CM
TERM/SEMESTER: 11 YEAR 11
ACADEMIC YEAR: 2014/2015
UNIT: SOLAR SYSTEM
UNIT CODE: SEE 0112

DATE: 23RD APRIL 2015

TIME: 2 HOURS

Instructions to candidates

This paper contains two sections A and B

Answer question one (COMPULSORY) and any other two question in section B.

You should have the following for this examination;

- Drawing instruments
- Scientific calculator

SECTION A (COMPULSORY)

Qn. 1(a) Define the following terminologies

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|---|----------|
| (i) Direct insolation | (1mrk) |
| (ii) Radiance | (1mrk) |
| (iii) Irradiance | (1mrk) |
| (b) Explain the process of conversion of solar to chemical energy | (5mrks) |
| (c) With the aid of a diagram describer a solar cell | (12mrks) |
| (d) Explain the working of a parabolic trough collector | (10mks) |

SECTION B (Answer any two questions)

Qn. 2.(a) With aid of a diagram explain the parts photovoltaic system **(15mrks)**

(b) State any five application of solar energy **(5mrks)**

Qn. 3. (a) Explain any five factors to be considered when choosing a wiring system **(10mrks)**

(b) Explain the following test performed on completed installation

(i) Polarity Test

(ii) Functional Test **(10mrks)**

Qn.4. Explain the procedures of sizing a solar system

(20mrks)