

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**P.O. Box 972-60200 – Meru-Kenya**

**Tel: 020-2069349, 061-2309217. 064-30320 Cell phone: +254 712524293, +254 789151411**

**Fax: 064-30321**

**Website:** [**www.must.ac.ke**](http://www.must.ac.ke) **Email:** **info@must.ac.ke**

**University Examinations 2014/2015**

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR DIPLOMA IN ELECTRICAL ENGINEERING

**EEE 2201: ELECTRICAL INSTALLATION TECHNOLOGY III**

**DATE: AUGUST, 2015 TIME: 3 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE – 30 MARKS**

1. Excess current is one of the requirement of statutory and the I.E.E. regulations. State what I.E.E indicate. (2 Marks)
2. Explain briefly the need of electrical protection. (4 Marks)
3. Draw the electrical symbols of the following accessories; (5 Marks)
4. Two way two gang switch
5. Energy meter
6. Switched socket outlet
7. Fuse link
8. Intermediate switch
9. State any three purposes of I.E.E regulation requirements in building. (6 Marks)
10. List two types of standby supplies. (2 Marks)
11. Outline the main refrigeration electrical components. (5 Marks)
12. Define diversity factor. (2 Marks)
13. State the features of standby supplies. (4 Marks)

**QUESTION TWO (15 MARKS)**

1. A substation has three outgoing feeders;

Feeder 1 has maximum demand of 10mw at 10.00A.M

Feeder 2 has maximum demand of 12mw at 7.00p.m

Feeder 3 has maximum demand of 20mw at 9.00 p.m

 The maximum demand of all three feeders is 33mw at 8.00 p.m. Determine diversity factor. (3 Marks)

1. Draw a wiring diagram of two (2) lamps connected in parallel and controlled independently from three different positions. (6 Marks)
2. Outline the general rules of electrical installation design. (6 Marks)

**QUESTION THREE (15 MARKS)**

1. Explain the purposes of stand by supplies. (4 Marks)
2. State the procedures taken for photo voltaic (PV) installation. (4 Marks)
3. Describe the typical components of air conditioning system. (7 Marks)

**QUESTION FOUR (15 MARKS)**

1. Outline four ways that are used to design a good airflow in a whole-building ventilation system. (4 Marks)
2. Explain categories of ventilation. (4 Marks)
3. With aid of a diagram explain refrigeration cycle. (7 Marks)