

**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**](mailto:info@must.ac.ke)

**University Examinations 2015/2016**

SECOND YEAR SECOND SEMESTER EXAMINATION FOR DIPLOMA IN ELECTRICAL ENGINEERING

**EEE 2251: ELECTRICAL INSTALLATION TECHNOLOGY IV**

**DATE: NOVEMBER 2015 TIME: 11/2 HOURS**

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

**QUESTION ONE (30 MARKS)**

1. Outline the purpose of earthing. (3 Marks)
2. Define the following terms as used in relation to earthing:
3. Earth loop impedance. (2 Marks)
4. Earth leakage. (2 Marks)
5. Earth has many failings as a conductor. Explain. (3 Marks)
6. State two possible causes of the following electrical fault:
7. Electric stock. (2 Marks)
8. Fire/burning. (2 Marks)
9. Complete loss of supply. (2 Marks)
10. An electric heater is fitted to a copper of mass 0.5 kg containing 1.5 litres of water. Determine the amount of heat needed to raise the temperature of the water 20oC to boiling point. (3 Marks)
11. State the procedures to observe whenever an electrical fault occurs. (5 Marks)
12. Explain the classification of hazardous areas. (6 Marks)

**QUESTION TWO (15 MARKS)**

1. Petrol service pumps is a hazardous area, explain briefly the conditions required for its construction and in station. (9 Marks)
2. Explain briefly the following conditions which limit the choice of electrical machines:
3. Supply available. (2 Marks)
4. Rating. (2 Marks)
5. Special conditions. (2 Marks)

**QUESTION THREE (15 MARKS)**

1. Define commission. (2 Marks)
2. Explain briefly the purpose of issuing a test certificate of a completed installation or additional of installation work. (5 Marks)
3. With aid of a circuit diagram, describe high voltage direct current testing of caldes. (5 Marks)
4. State how negligence, misuse or abuse by the installer or user may result in electrical faults. (3 Marks)

**QUESTION FOUR (15 MARKS)**

1. Outline the purpose of protective multiple earthing. (3 Marks)
2. With aid of diagrams, explain the procedures of carrying out soil resistivity tests. (7 Marks)
3. Explain briefly why the earth electrodes must be situated outside the resistance area of any other electrode. (3 Marks)
4. State two methods used for prevention of earth leakeage. (2 Marks)