

**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 2014/2015**

FIRST YEAR, SECOND SEMESTER EXAMINATION FOR DIPLOMA IN ELECTRICAL ENGINEERING

**EEE 2151: ELECTRICAL INSTALLATION TECHNOLOGY II**

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

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

**QUESTION ONE – 30 MARKS**

1. Define the following terms; (5 Marks)
2. Maximum demand
3. Connected load
4. Load factor
5. Plant capacity factor
6. State four objectives of tariff. (4 Marks)
7. The maximum demand on a power station is 100 mw. If the annual load factor is 40%, calculate the total energy generated in a year. (3 Marks)
8. State two equipments used for power factor improvement. (2 Marks)
9. Describe two causes of low power factor. (2 Marks)
10. Suppose a circuit draws a current of 10A at a voltage of 240V and its p.f is 0.8 lagging. Calculate; (3 Marks)
11. Apparent power
12. Active power
13. Reactive power
14. State three advantages of LEDs lamp over the other types of luminaires. (3 Marks)
15. Briefly explain the construction and operation of incandescent lamps. (4 Marks)
16. Highlight four I.E..E.E Regulation requirements for a temporary installation. (4 Marks)

**QUESTION TWO (15 MARKS)**

a) State three main types of hazard. (3 Marks)

b) Describe the three main potential danger areas. (7 Marks)

c) Explain the installation in corrosive atmospheres. (5 Marks)

**QUESTION THREE (15 MARKS)**

a) State four advantages of compact fluorescent lamps (C.F.L.) (4 Marks)

b) With aid of a diagram explain the construction and operation of a fluorescent lamp.

(8 Marks)

c) Compare the electro-magnetic ballasts and electronic ballasts. (3 Marks)

**QUESTION FOUR (15 MARKS)**

1. State three advantages of induction type meters. (3 Marks)
2. Explain two disadvantages of low power factor. (4 Marks)
3. A 100mw power station delivers 100Mw for 2 hours, 50Mw for 6 hours and is shut down for the rest of each day. It is also shut down for maintenance for 45 days each year. Calculate its annual load factor. (8 Marks)