



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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## University Examinations 2013/2014

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR DIPLOMA IN ELECTRICAL  
ENGINEERING

### EEE 0222: ELECTRICAL INSTALLATION TECHNOLOGY III

DATE: APRIL 2014

TIME: 1 ½ HOURS

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

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#### QUESTION ONE – (30 MARKS)

- (a) Describe an alarm system with the aid of a block diagram. (4 Marks)
- (b) Describe two methods of excess current protection. (4 Marks)
- (c) With the aid of a current diagram describe an earth leakage circuit breaker (ELCB) which is voltage operated. (8 Marks)
- (d) With the aid of a diagram describe a high breaking capacity fuse. (5 Marks)
- (e) Define the following terms;
  - (i) Electric circuit
  - (ii) Final sub-circuit
  - (iii) Diversity (6 Marks)
- (f) Describe three sources of technical information. (3 Marks)

#### QUESTION TWO – (15 MARK)

- (a) Draw a control sequence for a domestic installation from intake point to final sub-circuit. (6 Marks)
- (b) Define the following terms as used in installation;
  - (i) Earthing
  - (ii) Discrimination
  - (iii) Fusing factor (6 Marks)

(c) Explain three methods of earthing.

(3 Marks)

**QUESTION THREE – (15 MARKS)**

(a) Explain the following terms indicating their functions in installation

(i) Insulators

(ii) Switchgear

(iii) Isolator

(6 Marks)

(b) Describe a refrigeration system with the aid of a diagram.

(6 Marks)

(c) State three components of an air conditioning system.

(3 Marks)

**QUESTION FOUR – (15 MARKS)**

(a) Describe the first three stages of project design giving examples in your area of specialization.

(6 Marks)

(b) Describe a unitary air conditioning system with the aid of a diagram.

(5 Marks)

(c) Explain four factors to consider for a good alarm system.

(4 Marks)