



**MERU UNIVERSITY COLLEGE  
OF SCIENCE & TECHNOLOGY**

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**University Examinations 2010/2011**

**FIRST YEAR, SECOND SEMESTER EXAMINATIONS FOR CERTIFICATE IN  
ELECTRICAL ENGINEERING**

**CEE 0114: ELECTRICAL INSTALLATION TECHNOLOGY II**

**DATE: DECEMBER 2010**

**TIME: 1½ HOURS**

**INSTRUCTIONS:** Answer questions *one in Section A* and any other two questions from *Section B*.

**SECTION A**

**QUESTION ONE – (30 MARKS)**

- (a) List down any three test that must be carried in a newly installed wiring before commissioning. (3 Marks)
- (b) By using a well labeled diagram, describe any two tests carried out in an installation before commissioning. (12 Marks)
- (c) Name
  - (i) Any two commonly used wiring systems. (2 Marks)
  - (ii) Any two classes of conduit. (2 Marks)
- (d) Explain the earthing factor in steel conduit used in an installation. (3 Marks)
- (e) Distinguish between trunking system and the duct wiring systems. (4 Marks)
- (f) Using a labeled diagram, explain the operation of fluorescent fitting incorporating a glow type starter. (4 Marks)

**SECTION B (30 MARKS)**

**QUESTION TWO – (15 MARKS)**

- (a) What is stroboscopic effect in lighting? (2 Marks)
- (b) The illumination of a drawing office 30m x 10m is to have a value of 250 lux and is to be provided by a number of 300 W filament lamps. If the utilization factor is 0.4 and the

maintenance factor is 0.9, determine the number of lamps required. The efficiency of each lamp is 14 lumens per watt. (8 Marks)

(c) Name any two excess current operated protection devices. (2 Marks)

(d) Draw and label a cross-section of an armoured p.v.c cable. (3 Marks)

### **QUESTION THREE – (15 MARKS)**

(a) Define:

(i) Fuse

(ii) Fusing factor

(iii) Minimum fusing current

(iv) Current rating of a fuse element (4 Marks)

(b) Name any two earth methods. (2 Marks)

(c) Describe any one of those two methods in (3c). (4 Marks)

(d) Describe the construction of any one excess current operated device. (5 Marks)

### **QUESTION FOUR – (15 MARKS)**

(a) List down any four authorities responsible for power supply in Kenya. (2 Marks)

(b) Name any four power supply systems. (2 Marks)

(c) By use of a labeled diagram, explain the general lay-out of the power system. (6 Marks)

(d) Describe the operation of current operated earth leakage circuit breaker. (5 Marks)