



# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

*Faculty of Engineering and Technology*

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

**DIPLOMA IN TECHNOLOGY**

EEP2205: ELECTRICAL INSTALLATION TECHNOLOGY II

**SPECIAL/SUPPLEMENTARY EXAMINATION**

**SERIES: OCTOBER 2011**

**TIME: 2 HOURS**

### **Instructions to Candidates:**

You should have the following for this examination

- *Answer booklet*
- *A non-programmable scientific calculator*

This paper consists of **FIVE** questions. Answer question **ONE (COMPULSORY)** and any other **TWO** questions

Maximum marks for each part of a question are clearly shown.

This paper consists of **THREE** printed pages

## SECTION A (COMPULSORY)

### Question 1

- a) State:
- FOUR** factors to be considered in the selection of a wiring system (4 marks)
  - FOUR** factors that influence the rating of cables for electrical installation (4 marks)
  - FOUR** tests and their results for a health Domestic Installation. (4 marks)
- b) Define the following:
- Hazaradous area
  - Special Installation
  - Flame proof enclosure (6 marks)
- c) (i) Explain the generation of static electricity (4 marks)
- (ii) Explain the dangers posed by static electricity in hospital operation theatres and how it is Overcome (4 marks)
- (iii) Explain Division “O” of an explosive risk zone and the wiring system to be used in this zone. (4 marks)

## SECTION B (Answer *any TWO questions from this section - 20 marks each*)

### Question 2

- a) State:
- TWO** precautionary measures taken on long conduct runs in a damp situation (4 marks)
  - Requirement of cables in a damp situation (2 marks)
  - The recommended wiring system in a cold store and sitting of control gear. (4 marks)
- b) Define:
- Damp situation
  - Attendant hazards of damp situation (4 marks)
- c) (i) Define a temporary installation
- (ii) State regulation requirements for temporary installation
- (iii) Explain Diversity in Electrical installations. (6 marks)

### Question 3

- a) (i) Define the term “ Wiring System” (2 marks)
- (ii) State and explain **FIVE** factors to consider when choosing a wiring system. (8 marks)
- b) Define the term “Earthing” (2 marks)
- c) Draw and explain the construction and operation of a residue current operated Earth

**Question 4**

- a) Define:
- i. Fuse
  - ii. Circuit Breaker
  - iii. Discrimination
  - iv. Current rating
- (8 marks)
- b) With the aid of a wiring diagram, show the sequence of control equipment at a Domestic Consumer intake point with a ring circuit and a spur. (6 marks)
- c) Draw wiring diagrams to show how two lamps may be controlled using:-
- i. TWO, two-way switches
  - ii. TWO, two-way switches and **ONE** intermediate switch.
- (6 marks)

**Question 5**

- a) State:
- i. **FOUR** factors governing the rate of corrosion (4 marks)
  - ii. The **TWO** principle forms of corrosion (2 marks)
- b) Define:
- i. Caravan
  - ii. Caravan site
- (4 marks)
- c) Explain
- i. Cathodic protection (2 marks)
  - ii. The **TWO** methods of Cathodic protection (Use aid diagrams) (6 marks)
- d) State any **TWO** Regulation requirements for caravan installation (2 marks)