



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2015/2016 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

**FIRST SEMESTER EXAMINATION FOR DIPLOMA IN ELECTRICAL AND
ELECTRONICS ENGINEERING**

EED 102: ELECTRICAL INSTALLATION TECHNOLOGY I

DATE:

TIME:

INSTRUCTIONS

Question One Is Compulsory And Answer Any Other Two.

1.
 - a) Whilst working on a site with others you hear a shout and on investigating you find someone lying on the ground, not moving nor apparently breathing, holding in his hand a flexible lead connected to a socket outlet.
 - i) List the correct order of steps to be taken.
 - ii) List five items of information which should be included in an incident report.

(8 marks)
 - b) Discuss the terms ignorance and carelessness as applied to safety precautions.

(4 marks)
 - c) Explain the procedure for carrying out an electric shock treatment using the “Kiss of life” method.

(6 marks)
 - d) State 4 energy players in Kenya and explain briefly the roles played by each.

(8 marks)
 - e) Discuss the main goals of Occupational Safety and Health Act 2007.

(4 marks)

2. a) State any **five** types of electrical joints. (5 marks)
- b) State the basic electrical and mechanical requirements on electrical conductor joints and the terminations. (6 marks)
- c) Draw the BS 3939 electrical symbols for the following:
- Fuse
 - Capacitor
 - wattmeter
 - Coil
 - Buzzer (5 marks)
- d) Draw a labeled circuit diagram showing how one lamp may be controlled from **TWO** independent positions. (4 marks)
3. a) With the aid of a well labeled diagram, explain the parts of an electric cable. (8 marks)
- b) Two cables are given as 7/0.85mm and 61/2.25mm, determine their cross-sectional areas. (4 marks)
- c) Explain any four insulating materials used in electrical engineering. (8 marks)
4. a) With the aid of a well labeled diagram, explain the 3 phase, 4 wire distribution system, showing all the voltage levels. (10 marks)
- b) With the aid of a well labeled wiring diagram, show the sequence of control equipment at the consumer's intake point for single phase supply. (7 marks)
- c) State the IEE regulations governing the intake point. (3 marks)
5. (a) State Two reasons for stranded conductors of a cable. (2 marks)
- (b) Draw a labeled cross section diagram of a three core paper insulated, lead sheathed steel wire armoured cable. (8 marks)
- (c) With the aid of labeled diagram, explain the D.C two wire distribution systems (8 marks)
- (d) State two disadvantages of D.C distribution systems as compared to AC (2 marks)