



MACHAKOS UNIVERSITY

University Examination 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

CERTIFICATE IN ELECTRICAL AND ELECTRONIC ENGINEERING

1601/114; COURSE FOUNDATION AND GENERAL CAREER INFORMATION.

DATE: 15/4/2019

TIME: 2.30-5.30 PM

INSTRUCTIONS:

Attempt any five questions of the following Seven questions.

QUESTION ONE (20 MARKS)

- a) Describe the following types of maintenance
- i. Predictive maintenance.
 - ii. Running maintenance. (4 marks)
- b) i Define the term ‘ code of conduct ’. (2 marks)
- ii State any three functions of a code of conduct in an organization. (3 marks)
 - iii State any two methods of promoting the code of conduct in an organization. (2 marks)
- c) Define the following terms as per the electric power Act , 1997.
- i. Electrical installation license
 - ii. Telecommunication plant. (4 marks)
- d) i Explain the term “ Quality control”
- ii State any three factors that contribute to the marketability of quality product (5 marks)

QUESTION TWO (20 MARKS)

- a) Outline any three roles of the Kenya Bureau of Standards in the service Industry. (3 marks)
- b) Describe the following tools used in workshops
- i. Hand file
 - ii. Centre Punch. (6 marks)
- c) State any three properties of copper as a conduct material. (3 marks)
- d) Explain the following classes of maintenance duties;
- i. Engineering
 - ii. Production. (4 marks)
- e) State the following
- i. Any two Rules strictly enforced for control over the work of maintenance.
 - ii. Any two importance of maintenance in Industry. (4 marks)

QUESTION THREE (20 MARKS)

- a) Explain the following terms
- i. Ethics
 - ii. Integrity. (4 marks)
- b) i State any two importance of ethics in Engineering. (2 marks)
- ii Explain any two significance of values in society. (2 marks)
- c) State any two powers that are conferred to the electricity regulatory Board by the electric Power Act. (2 marks)
- d) Explain the following classes of electrical installation licenses granted by the electrical regulatory board.
- i. Class C2
 - ii. Class B (4 marks)
- e) i State any three advantages of Aluminum as a conductor material. (3 marks)
- ii State any three objectives of the Kenya Bureau of Standards. (3 marks)

QUESTION FOUR (20 MARKS)

- a) State any three of the following
- i. Advantages of preventive maintenance
 - ii. Causes of machine breakdown. (6 marks)
- b) Describe the following types of tools used in Electrical workshops ;
- i. Bench Vice. (3 marks)
 - ii. Hacksaw. (3 marks)
- c) State the following ;
- i. Any three steps in planning a Preventive maintenance program.
 - ii. Any three precautions that are required while using a Hacksaw. (6 marks)
- d) State any four materials used in the following class of insulators
- i. Class 'A'
 - ii. Class 'B'. (2 marks)

QUESTION FIVE (20 MARKS)

- a) Give any two causes of the following faults that occurs in portable electric tools.
- i. Motor casing becomes too hot.
 - ii. Smoke emitted from motor. (4 marks)
- b) State the following
- i. Three objective of preventive maintenance.
 - ii. Three disadvantages of breakdown maintenance. (6 marks)
- c) State the registration fee paid for the following licenses for approved applications for electrical contractors.
- i. Class 'C1'
 - ii. Class "A2". (3 marks)
 - iii. Class 'B'
- d) Explain two requirement to comply with in undertaking Electrical installation work and as provided in Rule 8 of the Act. (4 marks)
- e) State any three functions of the Kenya Bureau of Standards. (3 marks)

QUESTION SIX (20 MARKS)

- a) Describe the following types of inspection as methods of quality control.
- i) Inwards Inspection
 - ii) First Off Inspection (4 marks)
- b) Explain two maintenance procedures for a portable electrical tool (4 marks)
- c) Outline any of the following
- i. Any three major approaches used to deal with breakdown maintenance
 - ii. Any three reasons why Breakdowns should be avoided. (6 marks)
- d) State the following
- i. Three objectives of quality control.
 - ii. Three advantages of quality control. (6 marks)

QUESTION SEVEN (20 MARKS)

- a) Explain the the following terms;
- i. Statistical Quality Control (SQC).
 - ii. Acceptance Sampling. (4 marks)
- b) State any three of the following ;
- i. Advantages of Central Inspection
 - ii. Functions of Inspection. (6 marks)
- c) i State any three precautions necessary while using an hammer in a striking operation . (3 marks)
- ii Explain the chipping operation carried out by a flat chisel . (4 marks)
- d) Explain the steps involved in the filing operation performed by a hand file. (3 marks)