



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya.

Tel: 020-2069349, 061-2309217. 064-30320 Cell phone: +254 712524293, +254 789151411

Fax: 064-30321

Website: www.must.ac.ke Email: info@must.ac.ke

University Examinations 2013/2014

SECOND YEAR, SECOND SEMESTER EXAMINATION FOR DIPLOMA IN ELECTRICAL
ENGINEERING

EEE 0231: ELECTRICAL MEASUREMENTS AND TESTING III

DATE: APRIL 2014

TIME: 1 ½ HOURS

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

QUESTION ONE – (30 MARKS)

- (a) Explain briefly the following terms:
- (i) Down time
 - (ii) Uptime (4 Marks)
- (b) Explain three states of corrective maintenance. (3 Marks)
- (c) State and explain three areas in production that affects reliability. (3 Marks)
- (d) Define the terms:
- (i) Maintainability
 - (ii) Failure rate (4 Marks)
- (e) State and explain three methods of static calibration. (6 Marks)
- (f) With aid of graph, explain various stages of reliability curve. (7 Marks)
- (g) In a system, the average time to repair any fault is 2 hours. Calculate the value of maintainability for a time of 4 hours. (3 Marks)

QUESTION TWO – (15 MARKS)

- (a) Distinguish between planned maintenance and predictive maintenance. (4 Marks)
- (b) State and explain three factors affecting MTTR. (3 Marks)
- (c) Define the term production testing and explain three tests done in ATE. (8 Marks)

QUESTION THREE – (15 MARKS)

- (a) Define the terms
 - (i) Quality
 - (ii) Quality control (2 Marks)
- (b) State and explain three types of prototypes. (6 Marks)
- (c) Temperature, atmospheric pressure, vibrations are some of environmental effects on reliability. Explain briefly these effects. (7 Marks)

QUESTION FOUR – (15 MARKS)

- (a) Explain briefly what the testable design is. (3 Marks)
- (b) What is the probability of the system working successfully for testing times of 1000hrs and 4200 hrs, if its estimated MTBF is 10000hrs. (4 Marks)
- (c) List and explain what is contained in test specification. (5 Marks)
- (d) Distinguish between the MTTF and MTBF. (3 Marks)