



MACHAKOS UNIVERSITY

University Examination 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

DIPLOMA IN ELECTRICAL AND ELECTRONIC ENGINEERING

EED 114: ELECTRICAL MEASUREMENTS AND TESTING 1

DATE: 6/5/2019

TIME: 8.30-10.30 AM

INSTRUCTIONS:

Answer question one and nay other two questions

QUESTIONS ONE (30 MARKS)

- a) Explain briefly a measurement system (3 marks)
- b) What is a transducer (2 marks)
- c) With an aid of labeled diagrams , explain the operation of any transducer applied in the Electronic Industry (5 marks)
- d) Describe THREE classes of operation of an Amplifier (12 marks)
- e) How are LEDs and photo Diodes applied in communication Engineering (8 marks)

QUESTION TWO (20 MARKS)

- a) Explain the following components
 - i. Diode
 - ii. Capacitor
 - iii. Inductor
 - iv. Optic fibre
 - v. LED

- b) In any THREE components /devices in Q2 (a) give two application (6 marks)
- c) With an aid of a diagram explain briefly a single – stage transistor (4 marks)

QUESTIONS THREE (20 MARKS)

- a) Explain briefly an Elettret microphone (4 marks)
- b) What is biasing in Electrical/Electronics Circuits (2 marks)
- c) With an aid of labeled diagrams , explain the working of a carbon microphone (10 marks)
- d) Modern Telecommunication networks use fibre optic Technology. Explain briefly the process of operation (4 marks)

QUESTION FOUR (20 MARKS)

- a) What is a feedback circuit (2 marks)
- b) With an aid of labelled diagram, explain an Oscillator Circuit? (8 marks)
- c) State any FOUR requirements of Oscillator circuits (6 marks)
- d) Explain a tuned Amplifier Circuit (4 marks)

QUESTION FIVE (20 MARKS)

- a) What is a transducer? (3 marks)
- b) Name any TWO Transducers (2 marks)
- c) With an aid of a construction diagram, explain a moving coil – microphone (5 marks)
- d) Explain the following
 - i. Amplitude
 - ii. Frequency
 - iii. Periodic Time
 - iv. Wave length
 - v. Angular velocity (10 marks)