



# MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

FIRST YEAR THIRD SEMESTER EXAMINATION FOR

ARTISAN IN ELECTRICAL AND ELECTRONICS ENGINEERING

TRADE THEORY

DATE: 18/12/2020

TIME: 8:30 – 11:30 AM

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## INSTRUCTIONS TO CANDIDATES

**Answer all questions**

1. a) Define the following (10 marks)
  - i) Qcell
  - ii) battery
  - iii) primary cell
  - iv) secondary cell
- b) With the aid of a diagram, explain the construction of a dry cell (10 marks)
2. a) With the aid of a diagram explain the working of a simple cell (10 marks)
- b) Define the following terms (10 marks)
  - i) local action
  - ii) electrolyte
  - iii) electrolysis
3. With the aid of a diagram define the following symbols (20 marks)
  - i) cooker control
  - ii) meter
  - iii) main control
  - iv) switch socket outlet
  - v) main control
  - vi) distribution board
  - vii) one-way switch
  - viii) discharge lamp
  - ix) fuse
  - x) pull or pendant switch
4. Explain any 10 safety precautions to be observed in a workshop (20 marks)
5. a) State ohms law
- b) A DC supply at 240v is supplied to a circuit comprising two resistors A and B in parallel, of 5 and 7.5 ohms respectively, in series with a third resistor C of 30 ohms, calculate the value of the fourth resistor D to be connected in parallel with C so that the total power in the circuit shall be 7.2 kw (20 marks)