



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

SECOND YEAR SECOND SEMESTER EXAMINATION FOR

DIPLOMA IN ELECTRICAL ENGINEERING

EED 218: POWER GENERATION AND TRANSMISSION (PGT)

DATE: 11/11/2020

TIME: 2.00-4.00 PM

INSTRUCTIONS

Answer Question One and any Other Two Questions

QUESTION ONE (30 MARKS)

- a) List any **Four** sources of electrical energy (4 marks)
- b) Explain any **Four** advantages of electrical supply. (4 marks)
- c) With the aid of a schematic diagram explain the operation of a hydro power plant. (4 marks)
- d) List any **Three** elements of a transmission system. (3 marks)
- e) Outline **Three** characteristics of a good;
 - i) conductors
 - ii) insulator (4 marks)
- f) Highlight the **Five** advantages of suspension insulators. (5 marks)
- g) List any **Four** advantages of hydro power plant. (4 marks)

QUESTION TWO (20 MARKS)

- a) Explain the various costs in economics of scale in overhead lines (6 marks)
- b)
 - i) Define a tariff (2 marks)
 - ii List any six characteristics of a desirable tariff (12 marks)

QUESTION THREE (20 MARKS)

- a) State and explain any Four factors to consider when locating a Hydro power plant site
(10 marks)
- b) State and explain any four factors to be considered when locating a steam power plant site
(10 marks)

QUESTION FOUR (20 MARKS)

With the aid of a well labeled diagram explain the operation of a steam power plant

QUESTION FIVE (20 MARKS)

- a) State any three types of poles used in transmission and distribution of Electric power
(3 marks)
- b) Explain any THREE advantages and THREE disadvantages of the poles mentioned in (a)
above
(15 marks)
- c) differentiate between copper conductor and aluminum
(2 marks)