



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

ELECTRICAL POWER

**MODULE: Electrical Plant Equipment Installation PAPER NO: 321/22/M07
and Repair**

DURATION: 3 Hours

NOVEMBER/ DECEMBER 2025 EXAMINATION

REQUIREMENTS

1. Non programable calculator.
2. Answer booklet.

INSTRUCTIONS TO CANDIDATE

1. Answer all questions.
2. Start a new question on a new page.

PAPER NO: 321/22/M07 – EQUIPMENT INSTALLATION MAINTENANCE AND REPAIR

QUESTION 1

- a) What is a transformer (2 marks)
- b) An ideal transformer has a turns ratio of 8:1 and primary current of 3A when it is supplied at 240V. calculate secondary voltage and secondary current. (8 marks)

QUESTION 2

- a) State two applications of the following types of D.C generators
- i) Shunt generator (2 marks)
- ii) Series generator (2 marks)
- iii) Compound generator (2 marks)
- b) Identify faults found in D.C machines. (4 marks)

QUESTION 3

With reference to inspection and testing explain the following:

- a) Connection of conductors. (2 marks)
- b) Identification of conductors. (2 marks)
- c) Rating of cables. (2 marks)
- d) Accessories and equipment (2 marks)
- e) Protection from shock. (2 marks)

QUESTION 4

State and briefly explain the three (3) factors to be considered when installing and mounting electrical machines. (10 marks)

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QUESTION 5

With the aid of a diagram describe the principle of operation of a capacitor start induction run motor. (10 marks)

QUESTION 6

Illustrate five (5) types of waveforms commonly found in a.c theory. (10 marks)

QUESTION 7

Draw and explain a residual current device (RCD). (10 marks)

QUESTION 8

Draw and explain the circuit of a fluorescent lamp. (10 marks)

QUESTION 9

State and explain steps taken when calculating cable size. (10 marks)

QUESTION 10

State any five (5) cable enclosures and their application. (10 marks)

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