



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE COMMUNICATION-ELECTRONICS N5

(8080235)

**28 June 2022 (X-paper)
09:00–12:00**

Drawing instruments and nonprogrammable calculators may be used.

This question paper consists of 6 pages and a formula sheet of 5 pages.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
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TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
 2. Read all the questions carefully.
 3. Number the answers according to the numbering system used in this question paper.
 4. Start each section on a new page.
 5. Write neatly and legibly.
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QUESTION 1: AC NETWORKS

1.1 Define the following terms:

1.1.1 Selectivity

1.1.2 Q-factor

1.1.3 Resonance

(3 × 2)

(6)

1.2 A series circuit consists of a coil with a DC resistance of 5Ω and an inductance of 22,5 mH and a variable capacitor of unknown value. The circuit is connected across a 220 V/50 Hz supply.

Determine the following:

1.2.1 The capacitor value at resonance

(3)

1.2.2 The voltage drop across the inductance

(4)

1.2.3 The voltage drop across the capacitor

(1)

1.2.4 The Q-factor of the circuit

(2)

1.3 Prove that $V_L = Q \times V_s$

(6)

[22]