



# higher education & training

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Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

T390(E)(J26)T

**NATIONAL CERTIFICATE**

**COMMUNICATION-ELECTRONICS N5**

(8080235)

**26 July 2019 (X-Paper)**

**09:00–12:00**

**This question paper consists of 7 pages and a formula sheet of 5 pages.**

**DEPARTMENT OF HIGHER EDUCATION AND TRAINING**  
**REPUBLIC OF SOUTH AFRICA**  
NATIONAL CERTIFICATE  
COMMUNICATION-ELECTRONICS N5  
TIME: 3 HOURS  
MARKS: 100

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**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. Use only a blue or black pen.
  6. Write neatly and legibly.
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**QUESTION 1: GENERAL**

Complete the following sentences by using the words in the list below. Write only the missing word or words next to the question number (1.1–1.5) in the ANSWER BOOK.

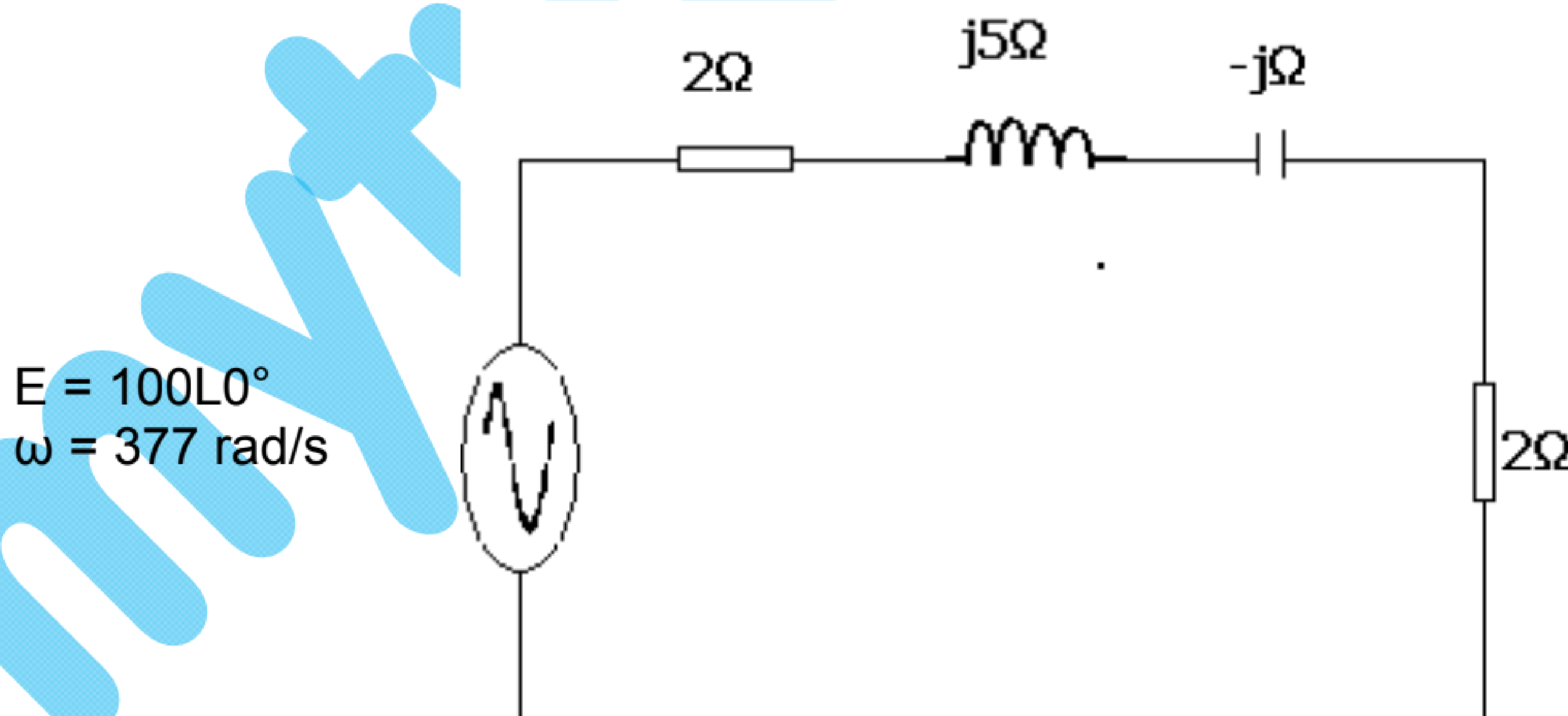
insertion loss; bandwidth; oppose; microphone; prototype; electrical;  
direct current; mismatch; networks; controllers

- 1.1 In a/an ... circuit, the only component available to ... current flow in the circuit is resistance.
- 1.2 ... is the total loss or the ... losses combined with the attenuation losses when a network is inserted.
- 1.3 When designing ... filters, both the T- and  $\pi$ - ... must be designed.
- 1.4 The ... converts mechanical sound waves to ... currents for amplification by the audio amplifier.
- 1.5 Phase-lead and lag-network ... are used chiefly to improve the accuracy of the ... and amplifier stability.

(5 × 2)

**[10]****QUESTION 2: AC NETWORKS**

- 2.1 Consider FIGURE 1 and answer the questions.

**FIGURE 1**

- 2.1.1 Determine the total current. (3)
- 2.1.2 Write the expression for the current as a function of time. (3)
- 2.1.3 Draw the phasor diagram. (2)