



education

Department of
Education
FREE STATE PROVINCE

EXPERIMENT

GRADE 10

TECHNICAL SCIENCES

MARCH 2018

MARKS: 15

TIME: 30 MINUTES

This paper consists of FOUR pages.

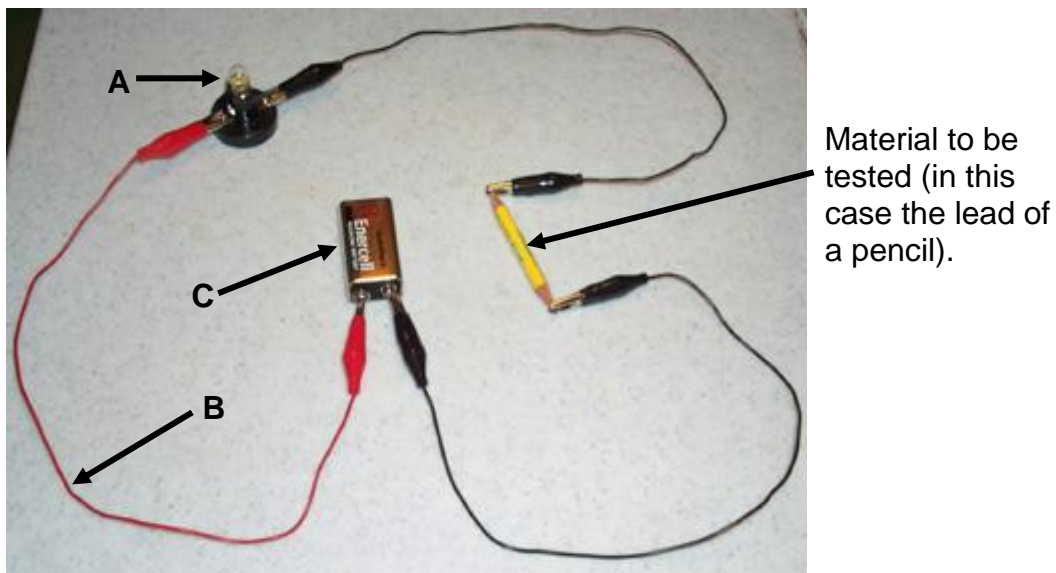
Name of learner Grade

INSTRUCTIONS AND INFORMATION

1. Write your name and grade in the appropriate spaces on the FRONT PAGE of this question paper.
 2. Answer ALL questions in the spaces provided in THIS QUESTION PAPER.
 3. You may use a non-programmable pocket calculator.
 4. You may use appropriate mathematical instruments.
 5. Give brief motivations, discussions, et cetera where required.
 6. Write neatly and legibly.
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QUESTION 1

The picture below represents a circuit that was used to investigate the electrical conductivity of different materials. Three circuit components are labelled **A**, **B** and **C**.



- 1.1 Draw a circuit diagram to represent the above picture. (3)



- 1.2 Give the FUNCTION of each of **A**, **B** and **C** in this circuit. (3)

A: _____

B: _____

C: _____

- 1.3 Suppose component **A** malfunctions during the experiment and you do not have another one to use. What can you use instead of **A** in order to do the experiment? (1)

1.4 The following materials were tested during the experiment:

- The lead of a pencil
- A copper screw
- A plastic bottle
- An aluminium rod

1.4.1 Write down an investigative question for this experiment. (2)

1.4.2 Identify the dependent variable in this experiment. (1)

1.4.3 Identify the independent variable in this experiment. (1)

1.4.4 Can the lead of a pencil conduct electricity? Write down YES or NO and explain your answer. (2)

1.5 At some stage during your experiment, while you have the COPPER screw connected into the circuit, you observe that component **A** shows no sign that the copper conducts electricity. You find that the problem is not with component **A**; it is not broken or damaged. Give two possible reasons for your observation that copper apparently does not conduct electricity. (2)

[15]