education

Department of Education
FREE STATE PROVINCE

PRACTICAL TASK

GRADE 11

PHYSICAL SCIENCES

SEPTEMBER 2018

MARKS: 15

TIME: 30 MINUTES

This paper consists of FIVE 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. Show ALL the formulae and substitutions in ALL calculations.

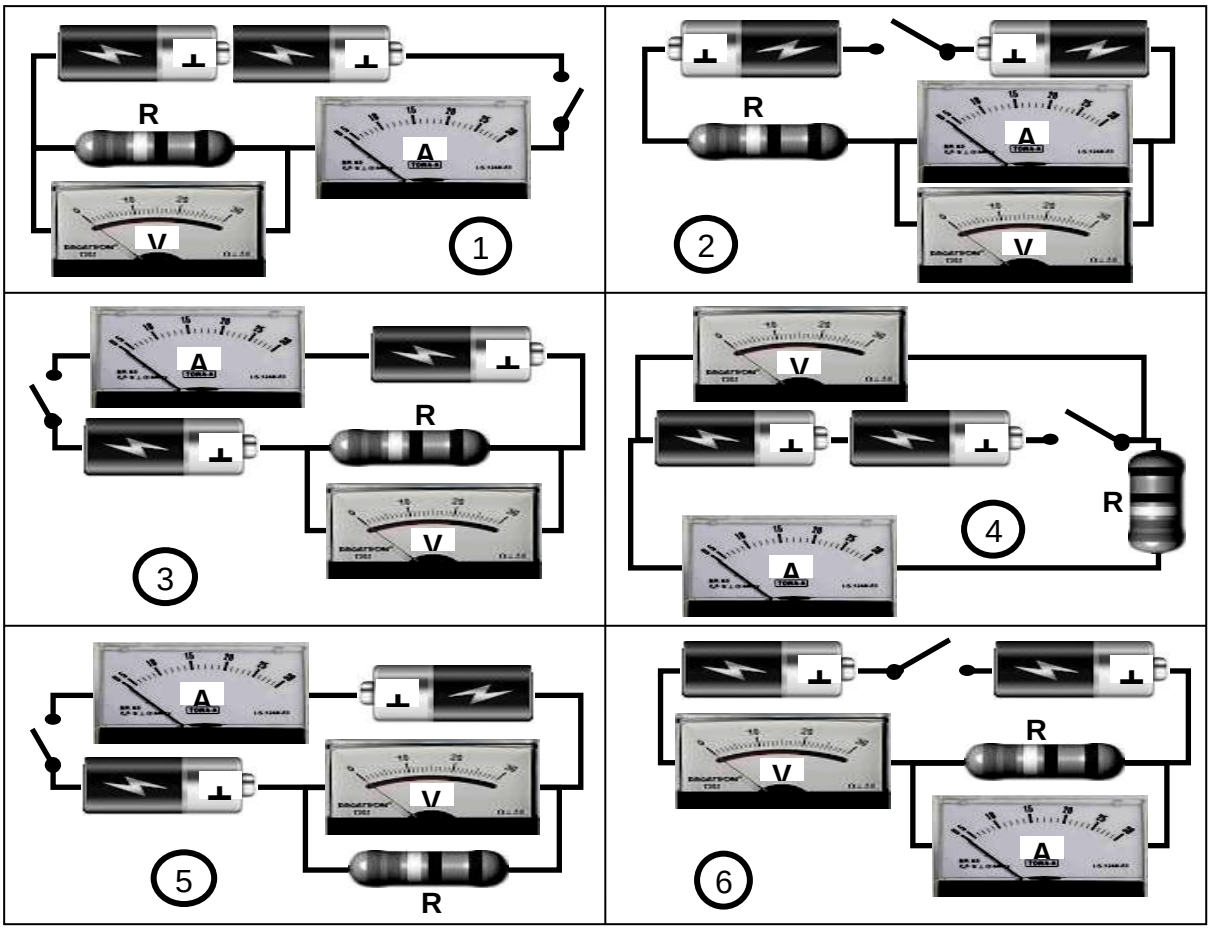
6. Round off your final numerical answers to a minimum of TWO decimal places where necessary.

7. Give brief motivations, discussions, et cetera where required.

8. Write neatly and legibly.

QUESTION 1

A group of Grade 11 learners investigate the relationship between the current passing through the resistor and the potential difference across resistor, **R**. When the switch is closed, they want to obtain a voltmeter and an ammeter reading. The battery must supply 6 V. They assemble the following circuits, numbered **1** to **6**. Assume that all components are properly connected.



1.1 Identify TWO circuits in which the components are CORRECTLY CONNECTED to carry out the investigation. Write down ONLY the numbers of these circuits.

_____ (2)

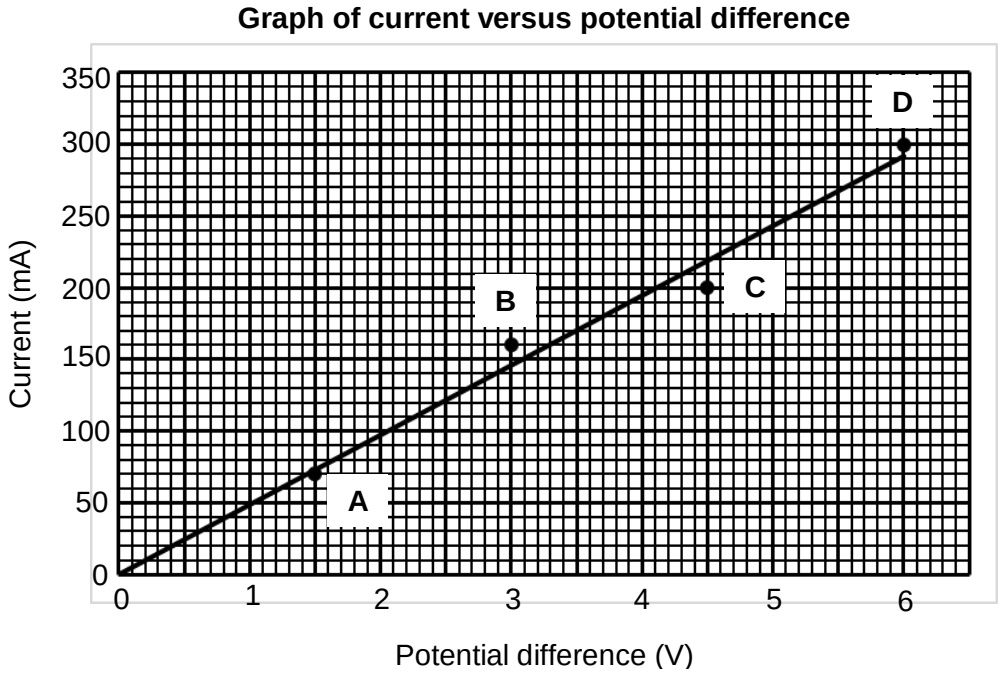
1.2 In the following table, write down the numbers any OTHER two circuits which CANNOT be used, and next to each number, indicate what is wrong with the circuit.

Number of circuit which cannot be used.	**What is wrong with the circuit?**

(4)
[6]

QUESTION 2

The following graph was drawn from four co-ordinates **A**, **B**, **C** and **D** for different potential differences.



2.1 Complete the following table for each of co-ordinates **A**, **B**, **C** and **D** to indicate what the measured readings on the ammeter and voltmeter have been.

Co-ordinate	**Potential difference** (V)	**Current** (mA)
A		
B		
C		
D		

(2)

2.2 Calculate the gradient of the graph (the best-fit line). DO NOT USE THE ORIGIN in your calculation.

_____

_____

_____

_____ (3)

2.3 Use your answer to Question 2.2 to determine the resistance, in Ω, of the resistor.

_____

_____

_____ (2)

2.4 What conclusion can be drawn from the graph above?

_____

_____

_____ (2)

[9]

GRAND TOTAL: [15]