



Grade 9 Natural Sciences TERM 3 TEST 12 -SEP-2023

Natural Science (Aquadene Secondary School)



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LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

CAPRICORN SOUTH DISTRICT

SENIOR PHASE

GRADE 9

**NATURAL SCIENCES
TERM 3 COMMON TEST
12 SEPTEMBER 2023**

MARKS: 60

TIME: 90 MINUTES

This question paper consists of 9 pages including the cover page.

INSTRUCTIONS AND INFORMATION

- 1. This question paper consists of TWO sections and SIX questions**
- 2. Answer ALL the questions in your answer sheet.**
- 3. Number the questions correctly according to the numbering system used in this question paper.**
- 4. Write neatly and legible.**

SECTION A

QUESTION 1

MULTIPLE CHOICE

1.1 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A-D) next to the question number (1.1.1-1.1.5) in the answer book.

1.1.1 The SI unit use to measure force

- A. Joules
- B. Watts
- C. Newton
- D. Volts (1)

1.1.2 Which of the following factors does not affect the resistance of a conducting wire

- A. Potential difference
- B. Thickness
- C. Length
- D. Type of a material used (1)

1.1.3 Illegal connections to the ESKOM main supply can be....

- A. Dangerous and regarded as energy theft
- B. Help all South Africans
- C. Can assist poor people.
- D. Useful to ESKOM (1)

1.1.4 The energy source in a nuclear power plant is...

- A. Natural gas
- B. Uranium
- C. Coal
- D. Oil (1)

1.1.5 Which ONE of the following is a contact force?

- A. Gravitational force
- B. Electrostatic force
- C. Magnetic force
- D. Frictional force (1)

[5]

1.2 Write the correct **BIOLOGICAL TERM** for the following statements.

1.2.1 The unit in which weight is measured (1)

1.2.2 The flow of electric current from a positive to a negative terminal of
a cell (1)

1.2.3 The ability of a cell to produce current. (1)

1.2.4 An electric switch designed to protect an electric circuit by
switching off automatically. (1)

[4]

1.3 MATCHING ITEMS

Choose an item from COLUMN B that matches the statement in COLUMN A.

Write only the letter (A–J) next to the question number (1.3.1–1.3.5) on the answer sheet, for example 1.3.5. A

Column A	Column B
1.3.1 A facility that generate electricity through different processes	A. Voltmeter
1.3.2 An instrument used to measure potential difference	B. Power station
1.3.3 Equipment used to step up or step down the voltage.	C. Fuse
1.3.4 The rate of electricity energy supply	D. Electrical power
1.3.5 A safety device that trips due to current overload in a circuit	E. Generator
	F. Ammeter
	G. Power surge
	H. Rheostat
	I Transformer
	J. Circuit breaker

[5]

TOTAL SECTION A [14]

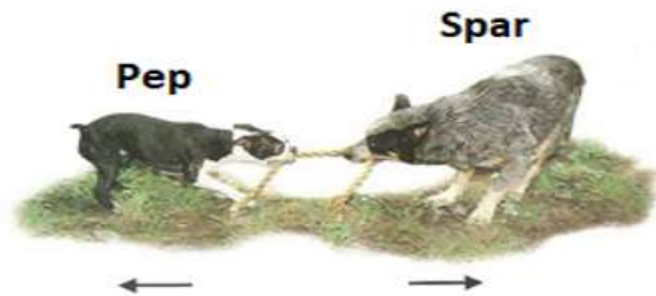
SECTION B

QUESTION 2: FORCES

2.1 What is a force? (1)

2.2 Name the two effects of a force. (2)

2.3 Use the diagram below to answer some of the questions that follow:



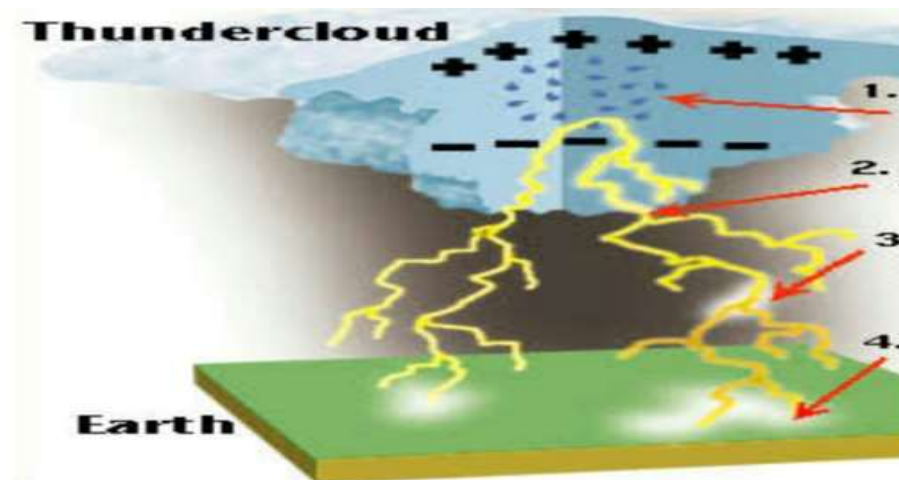
2.3.1 Between Pep and Spar who will have a greater pulling force? (1)

2.3.2 What is the reason for your answer in 2.3.1? (2)

2.4 Differentiate between contact and non-contact forces. (2)

2.5 Mention any two field forces that you have studied. (2)

2.6 Study the following diagram and answer the question that follows.



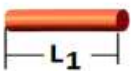
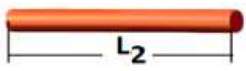
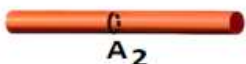
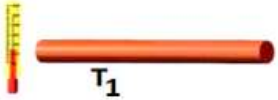
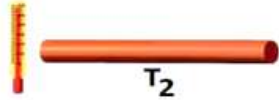
2.6.1 Explain what lightning is? (2)

2.6.2 Mention TWO ways that you can apply to protect yourself against lightning. (2)

[14]

QUESTION 3: RESISTANCE

3. Use the diagram to answer some of the questions that follow:

Factor	Less resistance	Greater resistance
A		
B		
C	 Copper	 Iron
D	 T ₁	 T ₂

3.1 Which factor of resistance is being investigated in B? (1)

3.2 Which factor of resistance is being investigated in C? (1)

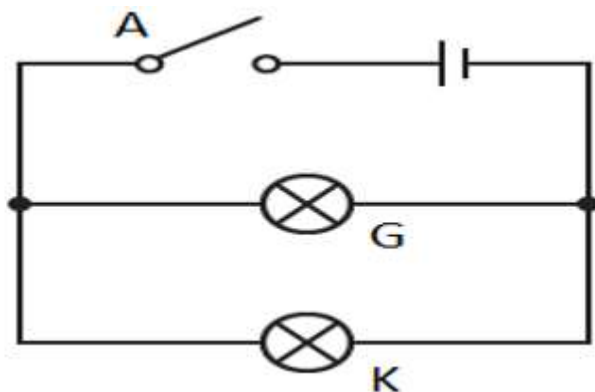
3.3 Discuss how temperature affects resistance. (2)

3.4 Explain why copper is a preferred conductor than iron. (2)

[6]

QUESTION 4: ELECTRIC CELLS, SERIES AND PARALLEL CIRCUITS

4.1 Use the diagram to answer some of the questions that follow.



4.1.1 What is the name of the component labelled A? (1)

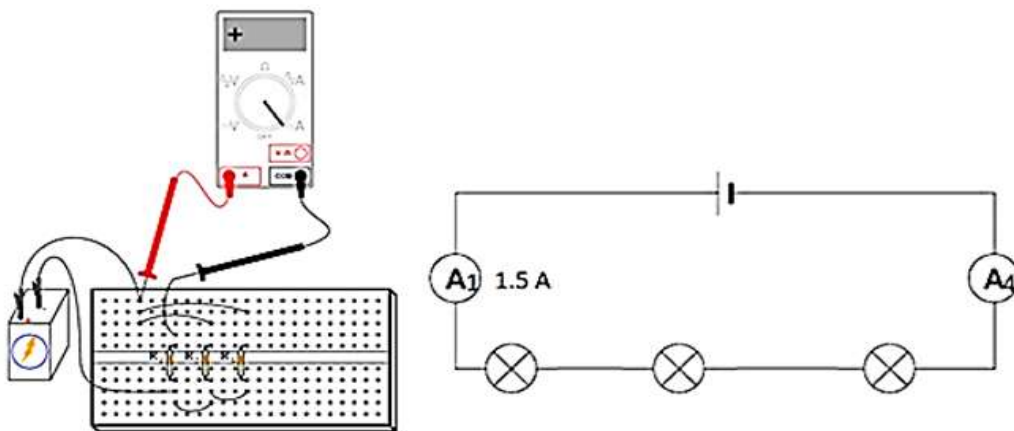
4.1.2 How are the bulbs in this circuit connected? (1)

4.1.3 Discuss two advantages of a parallel connection over series connection. (2)

4.1.4 What is a battery? (1)

4.1.5 What is the function of a cell in a circuit? (1)

4.2 Use the diagram below to answer the questions that follow:



4.2.1 How are the bulbs in the circuit diagram shown connected? (1)

4.2.2 What will be the reading in the ammeter labelled A4? (1)

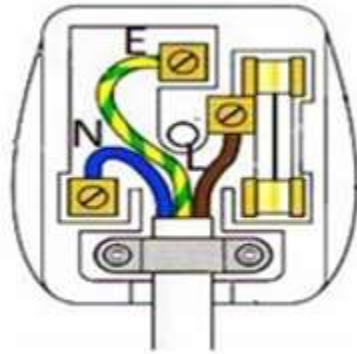
4.2.3 How will the circuit be affected if one bulb stops working? (2)

4.2.4 Compare the methods of connection of a voltmeter and an ammeter in a circuit. (2)

[12]

QUESTION 5: SAFETY WITH ELECTRICITY AND NATIONAL GRID

5.1 Many appliances have a 3-pin plug as a safety device to connect to the main circuit.



5.1.1 What kind of a plug is shown in the diagram? (1)

5.1.2 What do the letter L and E in the diagram represent? (2)

5.1.3 Give any ONE safety precautions that need to be followed wiring a 3-pin plug. (1)

5.2

A. Power stations generate electricity. Most power stations in South Africa are coal-fired (use coal). Solar, wind and nuclear are some of the alternative means to produce electricity.

B. Nuclear power stations, like Koeberg in Cape Town, use radioactive fuel instead of coal. Heat is produced by splitting a nucleus of an atom into two smaller ones producing a lot of energy in the process.

5.2.1 What is the purpose of power station? (1)

5.2.2 Explain briefly how electricity is generated in a coal power station. (3)

[8]

QUESTION 6: COST OF ELECTRICAL POWER

6.1 What is a kilowatt-hour? (2)

6.2. Assuming that 1 kWh costs 79 cents, work out how much it will cost to keep an electric heater of 2000W on for 8 hours. (4)

Use this information below:

[Cost = Power rating (Kw) × Hours × unit price]

[6]

TOTAL SECTION B [46]

GRAND TOTAL [60]