



# LIMPOPO

PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF  
**EDUCATION**

**GRADE 7**

**NATURAL SCIENCES**

**TERM 3 CONTROLLED TEST**

**19 SEPTEMBER 2025**

**Duration : 1 hour**

**Marks: 50**

**LEARNER:** \_\_\_\_\_

**SCHOOL:** \_\_\_\_\_

| Question number | 1 | 2 | 3 | 4 | 5  | 6 | 7  | Total |
|-----------------|---|---|---|---|----|---|----|-------|
| Possible mark   | 5 | 5 | 4 | 9 | 13 | 4 | 10 | 50    |
| Learner mark    |   |   |   |   |    |   |    |       |
| Moderated mark  |   |   |   |   |    |   |    |       |

**This question paper & answer book consists of 9 pages, including the cover page.**

**INSTRUCTIONS AND INFORMATION**

1. Answer all questions from both **Section A and B**.
2. This question paper also serves as an answer book.
3. Present your answers according to the instructions of each question.
4. ALL drawings should be done in pencil and labelled in blue or black ink.
5. Draw diagrams, tables or flow charts only when asked to do so.
6. The diagrams in this question paper are NOT necessarily drawn to scale.
7. Rough work page is included for use if necessary.
8. Write neatly and legibly.

**SECTION A****QUESTION 1: MULTIPLE CHOICE QUESTIONS**

Four options are provided as possible answers to each of the following questions. Choose the most correct answer and **CIRCLE** its letter **(A-D)**.

- 1.1 Choose the non-renewable energy source from the options below:  
A. Solar.  
B. Coal.  
C. Hydro.  
D. Wind. (1)
- 1.2 Identify the scenario which is not an illustration of kinetic energy:  
A. Spinning motor.  
B. Running boy.  
C. Charged battery.  
D. Flying Bird. (1)
- 1.3 Which of the following examples best demonstrates the process of conduction?  
A. Warmed air rises above a lit candle.  
B. A metal spoon gets warm when used to stir hot soup.  
C. A piece of paper is torn in half. (1)  
D. Sunlight brightens the dark room.
- 1.4 Which one of the items below is not a useful insulator to use when building energy efficient house?  
A. Hollow cement bricks.  
B. Large glass window.  
C. Thatch roofing. (1)  
D. Foam ceiling boards.
- 1.5 Why do shiny teapots keep tea warmer for longer than black teapots?  
A. They absorb heat far more efficiently than black teapots.  
B. They radiate heat inwards and outwards.  
C. They reflect heat back into the tea. (1)  
D. They attract air which is a good conductor.

**[5]**

**QUESTION 2: MATCH ITEMS**

Match the statements in **Column A** with the options in **Column B**. Write only the correct letter **(A-H)** from **Column B** as answer.

|     | <b>Column A</b>                                 | <b>Column B</b>  | <b>Answer</b> | <b>Marks</b> |
|-----|-------------------------------------------------|------------------|---------------|--------------|
| 2.1 | A good insulator.                               | A. Battery       |               | (1)          |
| 2.2 | An example of kinetic energy.                   | B. Vacuum        |               | (1)          |
| 2.3 | Chemical potential energy.                      | C. Element       |               | (1)          |
| 2.4 | An empty space that has no particles.           | D. Biofuel       |               | (1)          |
| 2.5 | Part of a heating appliance that output energy. | E. Steel         |               | (1)          |
|     |                                                 | F. Wood          |               |              |
|     |                                                 | G. Fossil fuel   |               |              |
|     |                                                 | H. A flying kite |               | <b>[5]</b>   |

**TOTAL SECTION A: [10]**

**SECTION B****QUESTION 3: SOURCES OF ENERGY**

3.1 What type of energy comes from the Sun? (1)

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3.2 State whether coal is a renewable or non-renewable energy source. Give a reason for your answer. (3)

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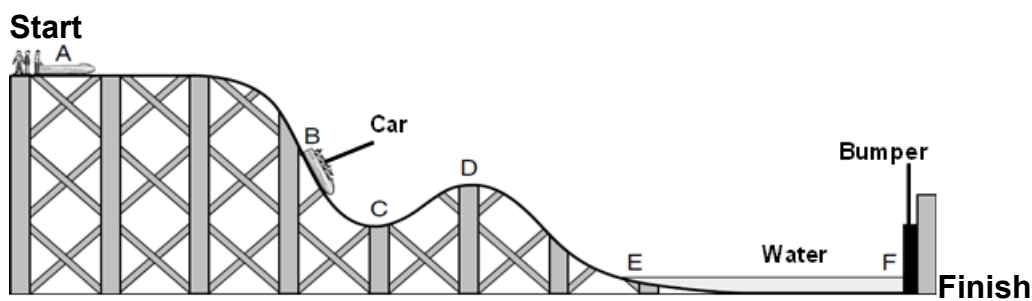
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**[4]**

**QUESTION 4: POTENTIAL AND KINETIC ENERGY**

Study the diagram below that shows the ride.

The letters **A, B, C, D, E** and **F** show different points along the track.



**A car ride along the track**

- 4.1 The car starts from **A** and travels to **F**, where it stops by hitting a bumper. At **E** the car enters a trench filled with water.

4.1.1 Define the term kinetic energy. (2)

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- 4.1.2 Explain why the moving car has kinetic energy.

----- (2)  
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- 4.2 When the car is at point **A**, what type of energy does it have and why? (3)

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- 4.3 Briefly analyze how the energy of the car changes as it moves from the top of a track at **A** to the bottom at **F**. (2)

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**[9]**

**QUESTION 5: HEAT TRANSFER**

- 5.1 How is energy being transferred in the following pictures that show different heating processes? Write down **conduction**, **convection** or **radiation**. Some illustrations may show more than one form. (3)

| HEATING PROCESS                                                                                                                         | ENERGY TRANSFER PROCESS                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
|  <p>A: The heat from the Sun travels to the Earth.</p> | <hr style="border-top: 1px dashed black;"/> <hr/> <hr/> |
|  <p>B: Boiling water in a metal pot.</p>              | <hr/> <hr style="border-top: 1px dashed black;"/> <hr/> |

- 5.2 Draw an energy transfer **Flow Map** for the following:  
You buy a cup of hot chocolate and hold it in your hands on a cold winter day. (2)



- 5.3 Explain why the heating element for a kettle is at the bottom and not at the top. (3)



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- 5.4 What is the main difference between conduction and convection? (2)

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- 5.5 A metal spoon is left in a hot cup of coffee. Explain how heat is transferred from the coffee to the spoon, and what happens to the temperature of the spoon over time. (3)

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[13]

**QUESTION 6: INSULATION AND ENERGY SAVING**

- 6.1 Name one way of saving electrical energy at home. (1)

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6.2 Describe two ways in which insulation can help save energy in a home. (2)

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----- (3)

### QUESTION 7: ENERGY TRANSFER TO SURROUNDINGS

7.1 Define the term energy. (2)

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7.2 What is the unit for measuring energy? (1)

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7.3 Name two alternative sources of energy that can be used to produce electricity. (2)

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7.4 Give two examples of appliances and explain why all appliances are not 100% energy efficient. (4)

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7.5 Why is it important to consider energy transfer to surroundings when designing everyday objects, such as buildings or appliances? (2)

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**(11)****SECTION A: [10]****SECTION B: [40]****GRAND TOTAL : [50]**

**ROUGH WORK**