

STRATHVAAL PRIMARY SCHOOL



TERM 4

GRADE 7

TECHNOLOGY

November 2023

MARKS: 60

TIME: 2 Hours

LEARNER: _____

SCHOOL: STRATHVAAL PRIMARY SCHOOL

SUB-DISTRICT: MATLOSANA

DISTRICT: DR KENNETH KAUNDA

EXAMINER: MR J. BUCHLER / MS G. MOSHOESHOE

MODERATOR: MRS D VAN STADEN

INSTRUCTIONS AND INFORMATION

1. Only use a blue pen when answering the questions.
2. All sketches or drawings must be done in pencil with labels in pen.
3. Write neatly and legibly.
4. Read the instructions for EACH question carefully.
5. Consult the rubrics and marks allocated to guide you when answering the questions.
6. This paper consists of THREE SECTIONS:

SECTION A - TECHNOLOGICAL KNOWLEDGE AND UNDERSTANDING [18]

SECTION B - DESIGN PROCESS SKILLS & GRAPHIC COMMUNICATION [30]

SECTION C - TECHNOLOGY, SOCIETY AND THE ENVIRONMENT [12]



SECTION A: TECHNOLOGICAL DESIGN PROCESS AND SKILLS [18 Marks]

Question 1: Multiple choice [6]

Answer the following multiple choice questions. Write the letter of the answer that you have selected on the Answer Grid.

1.1 What is a permanent magnet? (1)

- A) A piece of magnetic material that only repels metal objects.
- B) A piece of magnetic material that retains or keeps its magnetism after it is removed from a magnetic field.
- C) A piece of magnetic material that does not keep its magnetism after being removed from a magnetic field.
- D) A piece of magnetic material that does not repel metal objects.

1.2 How many recycled glass bottles are required to save enough energy to power a computer for 25 minutes? (1)

- A) Three
- B) Two
- C) One
- D) None of the above

1.3 What is a crank? (1)

- A) It is a bar or rod that has one or more right-angle bends in it.
- B) A crank is a mechanism with a groove in the centre.
- C) It is a mechanism resting on a pivot.
- D) It is a mechanism with a fulcrum.

1.4 What is circular movement? (1)

- A) A movement in one direction.
- B) A movement that forms a complete circle.
- C) A movement in a forwards and backwards direction.
- D) A movement that forms a pentagon.

1.5 What is the most common reason for people to become migrants? (1)

- A) They run out of food and clothing supplies.
- B) They go to larger town to look for better job opportunities.
- C) They are not given a space to plant crops.
- D) There is a natural disaster In their province.

1.6 What percent of your money is spent on the packaging alone, e.g. when buying McDonalds meals? (1)

- A) 25%
- B) 12%
- C) 16%
- D) None of the above

Answer Grid

1.1	1.2	1.3	1.4	1.5	1.6
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Question 2: Identify images [6]

Provide the following information for each image:

- a) Identify the image.
- b) Explain briefly where it can be used.

2.1 a) (1)



b) (1)

2.2



a)

(1)

b)

(1)

2.3



a)

(1)

b)

(1)

Question 3: Match the Columns [6]

Match Column A with Column B. Write the letter of the answer that you have selected on the Answer Grid.

COLUMN A

3.1 Electromagnet

3.2 Homestead

3.3 Ndebele people

3.4 Ingredients

3.5 Magnets

3.6 Processing food

COLUMN B

A These come from a stone called lodestone or magnetite, which could attract iron.

B This is done in order to keep the food from becoming old, stale or rotten, and to keep it from being eaten by animals such as mice and rats.

C Any of the food substances used to make a particular meal.

D A type of magnet in which the flow of electric current produces a magnetic field.

E A single building, or a collection of buildings grouped together on a large agricultural holding.

F They decorate their huts or houses with colourful designs and patterns.

Answer Grid

3.1	3.2	3.3	3.4	3.5	3.6
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SECTION B - DESIGN PROCESS SKILLS & GRAPHIC COMMUNICATION [30]

Question 4: True or False [10]

State whether the following is true or false. If **False**, then correct the statement.

4.1. The motor in a washing machine drives the small pulleys faster during spinning and bigger pulleys slowly during washing.

(2)

4.2 Shack fires and natural disasters such as floods or earthquakes may create the need for emergency shelters.

(2)

4.3 The magnetic field that an electromagnet creates is permanent.

(2)

4.4 The simplest form of electrical circuit is when an energy source (such as a battery) is not connected to a light bulb.

(2)

4.5 As much as 50% of waste in the average dustbin could be turned into compost.

(2)

Question 5: Short questions and pictures [20]

Scenario

The emergency shelter must be portable. This means that it should be easy to transport and carry to the camp. It should also be easy for the volunteers to set up with the most basic equipment. Remember, the shelters will have to be erected quickly, because the disaster victims will have an urgent need for shelter.

Emergency shelters should also be sturdy and strong. They should be able to withstand poor weather conditions and the movement of people in and out of them. The floor of the emergency shelter is as important as the roof and walls, because the ground gets cold and moist at night.

Remember that emergency shelters are only temporary solutions. This means that they will need to be easy to deconstruct and pack away when they are no longer needed by the disaster victims.

5.1 **a)** Use a grey pencil to draw a sketch of an emergency shelter. **b)** Add colour. **c)** Label the sketch - include all the materials and tools, showing what your temporary make-shift shelter will be made of. (10)

Rubric: Sketch of an emergency shelter

Wrote an interesting heading for the model emergency shelter
Started with the front view and added something in 2D
Indicated the measurements in cm's.

**Possible
mark (10)**

**1
2
2**

Actual mark

Used dark outlines and other types of lines	2
Made use of different colours and showed the materials	2
Neatness of drawing.	1
TOTAL	

Sketch of an emergency



5.2 Write a short design brief (in point form) explaining the following:

5.2.1 **Remember to start your sentence with ‘I am designing a...** (2)

5.2.2 Write down 3 (THREE) specifications (materials) of your emergency shelter. (3)

a) _____

b) _____

c) _____

5.2.3 Write down 3 (THREE) possible constraints or problems that you might have. (3)

a) _____

b) _____

c) _____

5.2.4 Name 2 (TWO) tools that you can possibly use to build your emergency shelter. (2)

a) _____

b) _____



Question 6: Short question and scenario [12]

Read the paragraph below and answer the questions

Scenario

The National Sea Rescue Institute provides emergency services in South Africa's seas. Rescue swimmers will swim out to help people, and other volunteers will assist victims, after they have been recovered from sea. Rescue swimmers normally wear a wetsuit. Most wetsuits are made from a textile called neoprene. Neoprene is a synthetic rubber that is flexible and elastic, even at very cold temperatures. This allows the rescuer to move as freely as possible when swimming to rescue someone. To make neoprene a better insulator of heat, it is put through a foaming process, where tiny bubbles of gas are released into the material.

This makes the material feel slightly spongy when pressed between the rescuer's skin and the cold water. Rescue workers and doctors on the rescue boat also need protection.

Conditions at sea can be cold and windy. Therefore, members of the rescue team need clothing that is wind and water resistant, and that offers them some warmth. The anoraks and trousers worn by the members of the NSRI usually have an outer shell made of a wind and water-resistant fabric. The inner layer is made from a fabric such as thick-weave cotton or poly-cotton, which will keep the rescuer warm.

6.1

a) What textile is used to make wetsuits? (1)

b) How is this textile processed, in order to make it a better insulator of heat? (2)

6.2 Why do the rescuers on the boat have to wear anoraks and trousers? (2)

6.3 What does the word “insulator” mean?

(1)

6.4 What is the purpose of the NSRI?

(2)

6.5 Name two materials, other than neoprene, that are waterproof textiles:

_____ and _____

(2)

6.6 How is technology meeting the needs of emergency workers? Are they getting paid for their job?

(2)

TOTAL: 60 MARKS