

# SMARTWIZ

## GRADE 8 TECHNOLOGY EXAM

**MARKS: 40**

MARKS	

**TIME: 2 hours**

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

**CLASS (e.g. 4A)** \_\_\_\_\_

**SURNAME** \_\_\_\_\_

**NAME** \_\_\_\_\_

MYST PATHWORKS

### Instructions for Students:

- > Read all instructions carefully before beginning the exam.
- > Write your name and student ID clearly on the answer sheet/booklet.
- > Answer all questions unless otherwise stated.
- > Show all your work/calculations where applicable.
- > Write clearly and legibly.
- > Use blue or black ink only. \* Do not use correction fluid/tape.
- > No electronic devices (calculators, phones, etc.) are allowed unless explicitly permitted.
- > Raise your hand if you have any questions.
- > Do not talk to other students during the exam.
- > Any form of cheating will result in disqualification.

**This test consists of 5 pages, excluding the cover page.**

## SECTION A: STRUCTURES

(10 Marks)

### Question 1

1.1 What is a structure?

\_\_\_\_\_ (1)

1.2 Name **two natural structures**.

1. \_\_\_\_\_  
2. \_\_\_\_\_ (2)

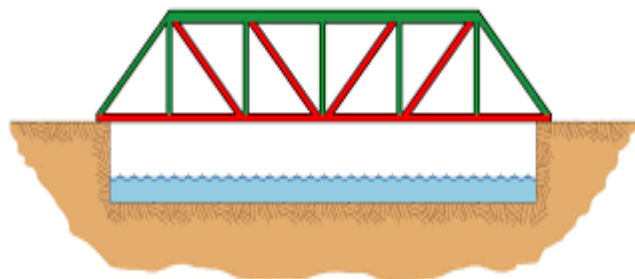
1.3 Name **two man-made structures**.

1. \_\_\_\_\_  
2. \_\_\_\_\_ (2)

1.4 Why do bridges often have triangle shapes in their design?

\_\_\_\_\_ (2)

1.5 Look at the image of the bridge below:



What type of structure is this? Circle the correct answer.

- A) Frame structure
- B) Solid structure
- C) Shell structure (1)

1.6 What is the **purpose** of a foundation in a building?

\_\_\_\_\_ (2)

## SECTION B: ELECTRICITY

(10 Marks)

### Question 2

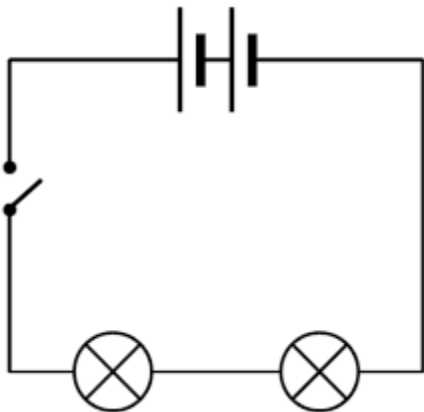
2.1 What is electricity used for? Write one example.

\_\_\_\_\_ (1)

2.2 Name the power source in a circuit.

\_\_\_\_\_ (1)

2.3 Look at the circuit diagram below and answer the questions:



2.3.1 Label the **switch** and the **bulb**. (2)

2.3.2 What happens when the switch is **open**?

\_\_\_\_\_ (1)

2.3.3 What happens when the switch is **closed**?

\_\_\_\_\_ (1)

2.4 Name two **conductors** of electricity.

1. \_\_\_\_\_

2. \_\_\_\_\_ (2)

2.5 Name one **insulator** of electricity.

\_\_\_\_\_ (1)

## SECTION C: TECHNOLOGY AND SOCIETY

(10 Marks)

### Question 3

3.1 Name one way technology helps us at school.

\_\_\_\_\_ (1)

3.2 How can people save electricity at home?

\_\_\_\_\_ (2)

3.3 What is **pollution**?

\_\_\_\_\_ (2)

3.4 Look at the image below:



What is the **danger** shown in the picture?

\_\_\_\_\_ (2)

3.5 What does **recycling** mean?

\_\_\_\_\_ (2)

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## SECTION D: DESIGN PROCESS

(10 Marks)

### Question 4

4.1 What is a **design**?

\_\_\_\_\_ (1)

4.2 List the first two steps of the design process.

1. \_\_\_\_\_
2. \_\_\_\_\_ (2)

4.3 Why is planning important before building something?

\_\_\_\_\_ (2)

4.4 What tool would you use to cut wood?

\_\_\_\_\_ (1)

4.5 Complete this sentence:

"I would like to design a \_\_\_\_\_ that can help people \_\_\_\_\_."

(4)

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**TOTAL: 40 MARKS**



## **MEMO**

### **SECTION A: STRUCTURES (10 MARKS)**

1.1 A structure is something that is built or put together to support a load. (1)

1.2

1. Tree
2. Mountain (Any two natural structures = 2)

1.3

1. Bridge
2. Building (Any two man-made structures = 2)

1.4 Triangles add strength and stability to structures. (2)

1.5 A) Frame structure (1)

1.6 The foundation supports the structure and keeps it stable and upright. (2)

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### **SECTION B: ELECTRICITY (10 MARKS)**

2.1 Example: To power lights, TVs, fridges, etc. (1)

2.2 Battery (1)

2.3.1 Correctly label the switch and bulb (2)

2.3.2 The bulb is off. (1)

2.3.3 The bulb lights up. (1)

2.4

1. Copper
2. Aluminium (Any two good conductors = 2)

2.5 Plastic (or any insulator like rubber or glass) (1)

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### **SECTION C: TECHNOLOGY AND SOCIETY (10 MARKS)**

3.1 Helps us learn – examples: smartboards, computers (1)

3.2 Turn off unused lights, use energy-saving bulbs (2)

3.3 Harm caused to the environment by waste or chemicals (2)

3.4 Danger: The person might get hurt by not paying attention while walking (2)

3.5 Recycling means using old materials again instead of throwing them away. (2)

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## SECTION D: DESIGN PROCESS (10 MARKS)

4.1 A design is a plan or drawing to show how something works or looks. (1)

4.2

1. Investigate
2. Design (2)

4.3 Planning helps you build correctly and avoid mistakes. (2)

4.4 Saw (or any appropriate cutting tool like a hacksaw) (1)

4.5 Accept any relevant and complete answer, e.g.:

"I would like to design a **robot** that can help people **clean their homes**." (4 – 2 marks for idea, 2 marks for problem-solving)

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**TOTAL: 40 MARKS**