SMARTWIZ

GRADE 7 TECHNOLOGY EXAM

MARKS: 85

MARKS	

TIME: 1 hour 30 minutes

SCHOOL_____

CLASS (e.g. 4A) _____

SURNAME_____

NAME_____

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 3 pages, excluding the cover page.

SECTION A: TECHNOLOGY IN OUR WORLD 🌎 (20 MARKS)

1.1 What is technology? Write your own definition. (2)

✏️ _____
✏️ _____

1.2 Match the innovation to its purpose. (Write only the letter) (4)

Innovation	Purpose Letter
A. Solar panels	
B. GPS system	
C. Recycling machines	
D. Electric cars	
Purpose	**Letter**
A. Helps reduce plastic waste	
B. Uses the sun to produce electricity	
C. Helps in navigation	
D. Reduces carbon emissions	

1.3 Give TWO advantages and TWO disadvantages of technology in daily life. (8)

Advantages:

✅ _____
✅ _____

Disadvantages:

⚠️ _____
⚠️ _____

1.4 Look at the image below and answer the questions: (6)

a) What kind of technology is shown in the image? _____ (2)
b) How might this technology help learners in the classroom? _____ (2)
c) Name one risk of overusing such technology. _____ (2)

SECTION B: STRUCTURES & MATERIALS 🧱 (25 MARKS)

2.1 Complete the table by writing ONE example and ONE property for each material: (12)

Material	Property (e.g., strong, flexible)	Example (e.g., chair, bottle)
Metal		
Plastic		
Wood		
Glass		

2.2 What is the difference between natural and man-made materials? Give an example of each. (4)

- **Natural:** _____
- Example: _____
- **Man-made:** _____
- Example: _____

2.3 Look at the image of a bridge and answer: (Use an image of a suspension bridge) (3)

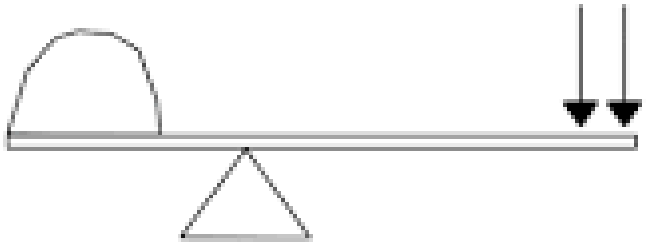
a) What type of structure is this? _____
b) Name **TWO materials** likely used in the construction.
1. _____ 2. _____

2.4 Why is it important to test a material before using it in construction? (2)

✏️ _____
✏️ _____

SECTION C: MECHANICAL SYSTEMS & CONTROL ⚙️ (25 MARKS)

3.1 Label the parts of the lever below: (5)



1. _____
2. _____
3. _____

3.2 Define the following terms: (6)

a) **Gear**: _____
b) **Pulley**: _____
c) **Axle**: _____

3.3 Draw and label a simple pulley system used to lift a bucket from a well. (6)

✏️ Label: rope, wheel, load, effort

3.4 Circle the correct answer. (8)

1. A lever is used to...
   a) cool food b) lift objects c) produce electricity
2. A gear system works best when...
   a) the teeth match b) they are different sizes c) one gear is broken
3. An example of a Class 1 lever is...
   a) hammer pulling a nail b) wheelbarrow c) arm lifting a weight
4. The fulcrum is the...
   a) load center b) pivot point c) handle

SECTION D: DESIGN PROCESS & DRAWING SKILLS ✍️ (30 MARKS)

4.1 Name the five stages of the design process in order. (5)

1. _____
2. _____
3. _____
4. _____
5. _____

4.2 Study the scenario below and answer: (10)

Scenario: Your school wants to create a new garden bench using recycled materials.

a) What is the problem? _____ (2)
b) What materials could you use? _____ (2)
c) What is one design constraint? _____ (2)
d) Draw your design idea below (use labels). (4)

TOTAL: 85 MARKS

MEMO

SECTION A: TECHNOLOGY IN OUR WORLD 🌎 (20 MARKS)

1.1 Definition of Technology:

- The use of knowledge, tools, and skills to solve problems and improve life.
  ✅ *(2 marks)*

1.2 Matching (1 mark each):

- A – B
- B – C
- C – A
- D – D
  ✅ *(4 marks)*

1.3 Advantages & Disadvantages (2 marks each):
✅ **Advantages:**

- Faster communication
- Easier access to information
  ✅ **Disadvantages:**
- Reduced physical activity
- Over-dependence on devices
  ✅ *(4 x 2 = 8 marks)*

1.4 Visual Analysis (2 marks each):
a) Educational or interactive technology
b) Helps with learning, engagement, and access to information
c) Eye strain, reduced physical activity, or distraction
✅ *(6 marks)*

SECTION B: STRUCTURES & MATERIALS 🧱 (25 MARKS)

2.1 Table Completion (3 marks per row = 12):

Material	Property	Example
Metal	Strong, durable	Bridge

Plastic	Lightweight	Bottle
Wood	Natural, strong	Table
Glass	Transparent, brittle	Window

✅ *(4 x 3 = 12 marks)*

2.2 Natural vs Man-made (2 marks per explanation + 1 for example):

- Natural: Found in nature, e.g., wood, stone
- Man-made: Manufactured by humans, e.g., plastic, concrete

✅ *(4 marks)*

2.3 Bridge Image Questions:
a) Suspension bridge or beam bridge
b) Steel and concrete
✅ *(3 marks)*

2.4 Importance of material testing:

- To ensure the material is safe, durable, and suitable for the product.

✅ *(2 marks)*

SECTION C: MECHANICAL SYSTEMS & CONTROL ⚙️ (25 MARKS)

3.1 Lever diagram labels:

- Fulcrum
- Load
- Effort

✅ *(5 marks – 1 for each correct label)*

3.2 Definitions (2 marks each):

- Gear: A wheel with teeth that fits into another gear to transmit motion.
- Pulley: A wheel with a grooved rim that holds a rope to lift loads.
- Axle: A rod that connects and rotates wheels or gears.

✅ *(6 marks)*

3.3 Pulley drawing:

- Correct drawing with labels: rope, pulley wheel, load, and effort.
  ✅ *(6 marks – 3 for accuracy, 3 for correct labels)*

3.4 Multiple choice (2 marks each):

1. b
2. a
3. a
4. b

   ✅ *(4 x 2 = 8 marks)*

SECTION D: DESIGN PROCESS & DRAWING SKILLS ✍️ (30 MARKS)

4.1 Design Process Stages (1 mark each):

1. Investigate
2. Design
3. Make
4. Evaluate
5. Communicate

   ✅ *(5 marks)*

4.2 Garden Bench Scenario (10 marks):
a) Problem: Need for garden seating using recycled materials (2)
b) Materials: Old wood, plastic bottles, metal frames (2)
c) Constraint: Limited budget, outdoor weather, time (2)
d) Drawing: Clear, labeled with recycled materials (4)
✅ *(10 marks)*

TOTAL: 85 MARKS