



# HILLCREST HIGH SCHOOL

Grade 8

## TECHNOLOGY

NOVEMBER 2025

**MARKS:** 110

**EXAMINER:** Mrs Magubane

**TIME:** 2 Hours

**MODERATOR:** Mrs Tonkin

SECTION		MARKS	TIME (minutes)
QUESTION 1:	Short questions (All topics)	40	40
QUESTION 2:	Impact of Technology	15	20
QUESTION 3:	Structures	15	20
QUESTION 4:	Mechanical Systems	20	20
QUESTION 5:	Electrical Systems	10	20
QUESTION 6:	Graphic Communication	10	20
<b>TOTAL:</b>		<b>110</b>	<b>120</b>

### INSTRUCTIONS

1. The question paper consists of 6 questions and 6 pages including the cover page.
2. A calculator may be used.
3. Write your Technology teacher's name on your answer booklet.
4. Technological based answers must be written.
5. All drawings/sketches must be completed using a sharp pencil and drawing instruments unless otherwise instructed.
6. Marks will be deducted for untidy work especially drawings/sketches.

**QUESTION 1****SHORT QUESTIONS****[40]**

- 1.1. 1.1.1. D (10)  
1.1.2. C  
1.1.3. D  
1.1.4. A  
1.1.5. D  
1.1.6. B  
1.1.7. D  
1.1.8. C  
1.1.9. A  
1.1.10. A
- 1.2. 1.2.1. T (10)  
1.2.2. T  
1.2.3. F  
1.2.4. F  
1.2.5. T  
1.2.6. F  
1.2.7. T  
1.2.8. T  
1.2.9. F  
1.2.10. F
- 1.3. 1.3.1. C (5)  
1.3.2. F  
1.3.3. B  
1.3.4. A  
1.3.5. D
- 1.4. 1.4.1. B (5)  
1.4.2. D  
1.4.3. A  
1.4.4. F  
1.4.5. C
- 1.5. 1.5.1. LED (5)  
1.5.2. Series  
1.5.3. Cam  
1.5.4. Environmentally friendly  
1.5.5. Solar
- 1.6. 1.6.1. King (5)  
1.6.2. Camshaft  
1.6.3. AND  
1.6.4. Rotary  
1.6.5. Orthographic

**QUESTION 2****IMPACT OF TECHNOLOGY****[15]**

- 2.1.       • Easy access to information. (3)  
           • Innovation and creativity.  
           • Better communication.  
           • Convenience of travelling.  
           • Better housing and lifestyle.  
           • Entertainment.  
           • Efficiency and productivity.  
           • Convenience in education.  
           • Changed health industry (any relevant answer)
- 2.2.    2.2.1. The breakdown of metals when exposed to water and air (5)  
                   (oxygen) also known as rust.  
           2.2.2. Combined with oxygen causing change in original substance  
                   properties  
           2.2.3. Treating a liquid with alkaline to make less acidic  
           2.2.4. Underground area where rock and soil become soaked by water.  
           2.2.5. The release of pollutants like gas and other particles into the air
- 2.3.    2.3.1. A material that can be broken down by air, water and bacteria to (2)  
                   small parts and absorbed by earth.  
           2.3.2. Reduce , reuse and recyle (3)  
           2.3.3. Changing the plasticbags into paper bags (2)  
                   Changing or recycling plastic to create polyester to make reusable  
                   shopping bags.

**QUESTION 3****STRUCTURES****[15]**

- 3.1.    Bending, fracture, toppling over (3)  
 3.2.    This happens when heavy objects are placed on top of narrow base or (2)  
           objects  
           causing structure failure.
- 3.3.    3.3.1. A – Column (6)  
                   B – Tie beam  
                   C – I beam  
                   D – Lintel  
                   E – Suspension bridge  
                   F – Cable stayed bridge  
           3.3.2. cables connected directly to a pair of suspended cables. (2)  
                   cables are connected directly to the nearest tower.  
           3.3.3. Manmade structure and frame structure (2)

**QUESTION 4****MECHANICAL SYSTEMS****[20]**

- 4.1.    4.1.1. A one working part of a machine that changes the value or (2)  
                   direction of a force to make the task easier.

- 4.1.2. A combination of components and mechanisms that are put together. Sub-systems are put together to form a machine. (2)
- 4.1.3. It is calculated by dividing the load over effort. (1)
- 4.2. 4.2.1. Crank (1)
- 4.2.2. It enables a person to apply a large force by turning the pin, distance between the handle and the central shaft creates mechanical advantage. This makes the handle, and therefore the shaft, easier to turn. (3)
- 4.2.3. Crankshaft (1)
- 4.3. 4.3.1. A – Push pull linkage (2)  
B – Parallel linkage
- 4.3.2. Bell crank changes the direction of movement or force through 90 degrees can be used in aeroplane controls (3)
- 4.4.  $A \times a = B \times b$  (5)  
 $40\text{kg} \times 16\text{N} = 55\text{kg} \times b$   
 $640\text{kg} = 55\text{kg} \times b$   
 $640\text{kg} / 35\text{kg} = b$   
 $B = 18,23\text{N}$

**QUESTION 5**

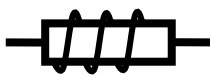
**ELECTRICAL SYSTEMS**

**[10]**

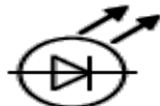
- 5.1. 5.1.1. (5)



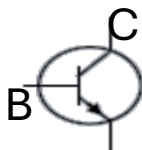
- 5.1.2.



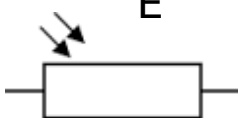
- 5.1.3.



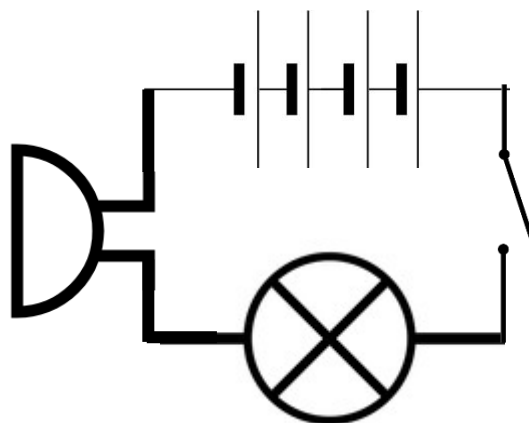
- 5.1.4.



- 5.1.5.



- 5.2.



(5)