



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

CAPRICORN SOUTH DISTRICT

SENIOR PHASE

GRADE 7__

TECHNOLOGY

MID-YEAR TEST

27 MAY 2024

Marks: 60

Durations: 1 hour 30 minutes

Instruction and information

- This paper consist of 09 pages.
- Answer all the questions on this paper.
- Write neatly and legibly.
- Write your names on the space provided.
- Use pencil, relevant colours to draw and a blue ink to write.

LEARNER NAME: _____ **GENDER:** _____

SCHOOL: _____

Marks Obtained		
SECTIONS		
SECTION A [30]	SECTION B [18]	SECTION C [12]

Code	Competence	Percentage
7	Outstanding Achievement	80 - 100
6	Meritorious Achievement	70 - 79
5	Substantial Achievement	60-69
4	Adequate Achievement	50-59
3	Moderate Achievement	40-49
2	Elementary Achievement	30-39
1	Not Achieved	0 -29

SECTION A- [30]

QUESTION 01- Multiple choice [06]

1. In each of the questions below are four options, choose by **CIRCLING** the **MOST CORRECT** answer.
- 1.1. Frame structures such as cell phone towers and windmills are strengthened through _____. (01)
- A. Tubing
 - B. Triangulation
 - C. Corrugation
 - D. Folding
- 1.2. Viewed from and angle (01)
- A. Oblique
 - B. Depth
 - C. Free-hand
 - D. Outline
- 1.3. The lines that show aspects of the product which are not visible but are drawn in short dashes. (01)
- A. Construction lines
 - B. Outlines
 - C. Hidden lines
 - D. Scales
- 1.4. The structures that are made by people are called _____. (01)
- A. Man-made structures
 - B. Shell structures
 - C. Natural structures
 - D. Solid structures
- 1.5. Which of the following steps indicate the correct order of the design process? (01)
- A. Investigate, make, design, evaluate, and communicate.
 - B. Communicate, design, make, evaluate, and investigate.
 - C. Design Investigate, make, evaluate, and communicate
 - D. Investigate, design, make, evaluate, and communicate.
- 1.6. Which of the statement below is a disadvantage of a cell phone to the environment? (01)
- A. Towers might be considered unattractive resulting to visual pollution.
 - B. System that uses the energy stored in compressed air to do work.
 - C. Person who uses technology to solve problems or meet needs.

D. Creates solutions to problems or meets a need by using tools technology, systems, and methods of organization.

QUESTION 02- True or False [06]

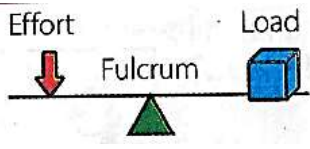
2. State whether the following statements are **TRUE** or **FALSE**. Write only true or false on the space provided below:
- 2.1. In design considerations we look at questions such as 'where do you live?' _____ (01)
- 2.2. Structures are used to protect, contain and destroy things. _____ (01)
- 2.3. A beam is a structural element that is capable to withstanding loads by resisting bending.
_____ (01)
- 2.4. Cell phone tower is a tall frame structure with wave receiver and transmitter at the top.
_____ (01)
- 2.5. Vanishing point are lines that move away from you in a drawing and meet at a single point in the drawing. _____ (01)
- 2.6. Constraints are limits of your design. _____ (01)

QUESTION 03- Fill- in [06]

3. Complete the following sentences by filling in the blank spaces:
- 3.1. _____ are structures that are not made by people, e.g., trees, plants, and rock formations, e.g., caves, skeletons and bones. (01)
- 3.2. The purpose of a structure is to _____, protect, support and/or span something. (01)
- 3.3. A short and clear statement which outlines the problem or the need is called _____ (01)
- 3.4. To _____ means researching the problem, study it to find facts, existing solutions and possible solutions. (01)
- 3.5. Communicating about the product as well as the entire design process means to _____ (01)
- 3.6. The ability of a mechanism to make work easier because the force to do work has been increased is called the _____. (01)

QUESTION 04- Match Column [06]

4. Match the terms in column A with the definitions in column B. Only write the letter that matches the number in column C.

	COLUMN A	COLUMN B	COLUMN C
4.1.	Visual pollution	A. A short and clear statement which outlines the problem or the need.	
4.2.	First-class lever	B. People who are skilled in a specific trade.	
4.3.	Sketch	C. 	
4.4.	Hydraulic system	D. Anything which ruins what something looks like.	
4.5.	Design brief	E. A quickly drawn freehand drawing.	
4.6.	Artisan	F. It uses a liquid such as water to make things move.	

QUESTION 05- Definitions [03]

5. Define the terminologies below:

5.1. Investigate:

_____ (01)

5.2. Natural structure:

_____ (01)

5.3. Outline:

_____ (01)

QUESTION 06- Terminologies [03]

6. Give ONE word/ terminology for the sentences below:

6.1. A bridge is a structure that _____ across the river. (01)

6.2. _____ is the relationship between the size of something in a drawing and its actual size, e.g. 1cm: 200km. (01)

6.3. Design _____ is a set of questions and answers that gives details and specification of the product should be. (01)

End of section A: 30 Marks

SECTION B- [18]

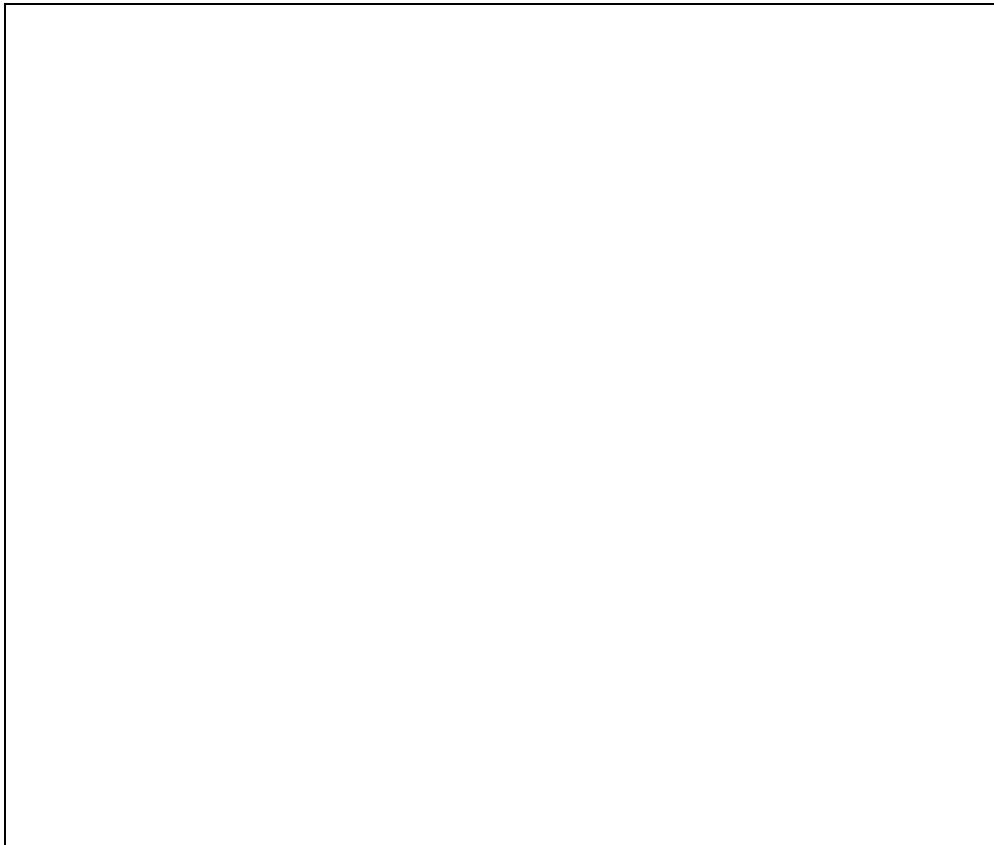
QUESTION 07- [06]

7. Look at the figures below and answer the questions that follows.

7.1. Below is an example of second-class lever.



Re-draw and label the diagram demonstrated above and indicate the position of the **load, Fulcrum, and effort.** (03)



7.2. Use the figure below to respond to the questions that follows.



a) Give two disadvantages of cell phone towers. (02)

- i. _____
- ii. _____

b) Outline the primary function of a cell phone tower? (01)

QUESTION 08- [06]

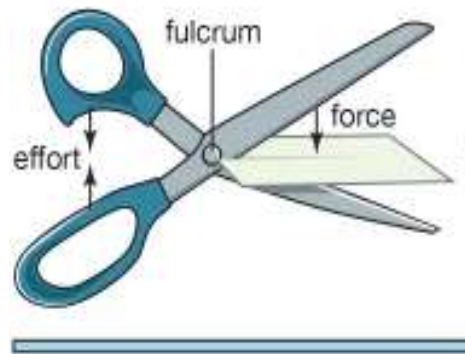
8. Study the table and answer the questions below:

8.1. Provide the purpose for each of the structures indicated below in **i.-vi.** Write the answers on the spaces provided. (06)

	BRIDGE	TORTOISE SHELL	Pillars
			
Purpose	i.	Contain/ protect	ii.
Type (Man-made/ Natural structure)	iii.	iv.	Man-made/manufactured structure
Classification (Shell/ Solid/ Frame)	v.	Shell	vi.

QUESTION 09- [06]

9. Study the diagram and answer the questions that follows.



9.1. Classify the diagram above as first-, second-, or third-class levers. (02)

9.2. Explain your classification in this case. (02)

9.3. Use the given information below to make a neat drawing of an artistic single vanishing point perspective of a stand of the cell phone tower. (02)

_____ x
VP



End of section B: 18 marks

SECTION C- [12]

QUESTION 10- CASE STUDY [12]

10. Read the article/ scenario below and the answer the questions that follows:



On 26 July 2016 a tornado hit the Tembisa informal settlement in Ekurhuleni. The tornado caused major damage to a shopping Centre, a hospital many vehicles, and cell phone towers. The people living around the affected area have been struggling to communicate using their cellphones as there was no signal.

10.1. What is the problem? (02)

10.2. How are you going to solve the problem?(Design brief) (02)

10.3. Provide responses to the following three specifications questions for your solution. (03)

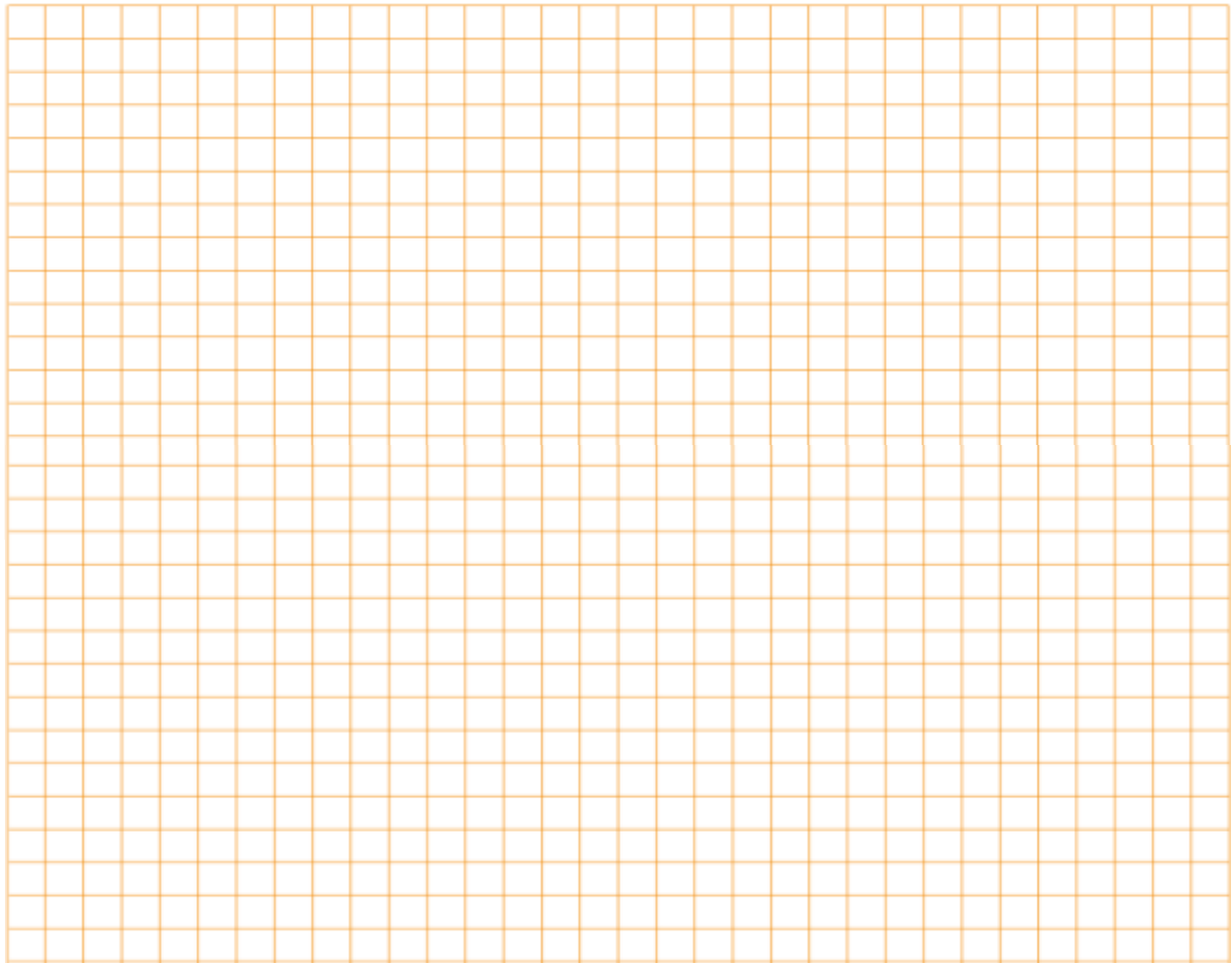
Design specification questions	Answers/ responses
i. Who will use it?	
ii. Where will it be used?	
iii. Will it damage the environment?	

10.4. List two constrains (limitations) for your solution (02)

10.4.1. _____

10.4.2. _____

10.5. Design your cell phone tower with a freehand 3D (oblique) sketch. Marks will be awarded for innovation and creativity. Use the grid provided. (03)



Assessment criteria for freehand sketch

Criteria	Possible marks	Marks obtained
Is the drawing a 3D and showing evidence of the conventions and neatness?	1	
Is the drawing showing triangulation and struts?	1	
Is the drawing showing evidence of innovation and creativity?	1	
Total	03	

End of section B: 12 marks

**SECTION A: [30] + SECTION B: [18] +SECTION C [12]
TOTAL MARKS: 60**