

SCHOOL LETTER HEAD

TERM 2

TECHNOLOGY
JUNE TEST PAPER
2022

MARKS: 60

TIME: 1H30Min

This question paper consists of 10 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of THREE Sections.
2. Answer all questions.
3. Write your answers in your answer sheet and attach drawings on Question 1.4 to your script when submitting.
4. Write your name on top of Question 1.4 before attaching it to your script.
5. Write neatly and legibly.
6. Use pencil to draw.

SECTION A

Scenario: Importance of cell-phone tower

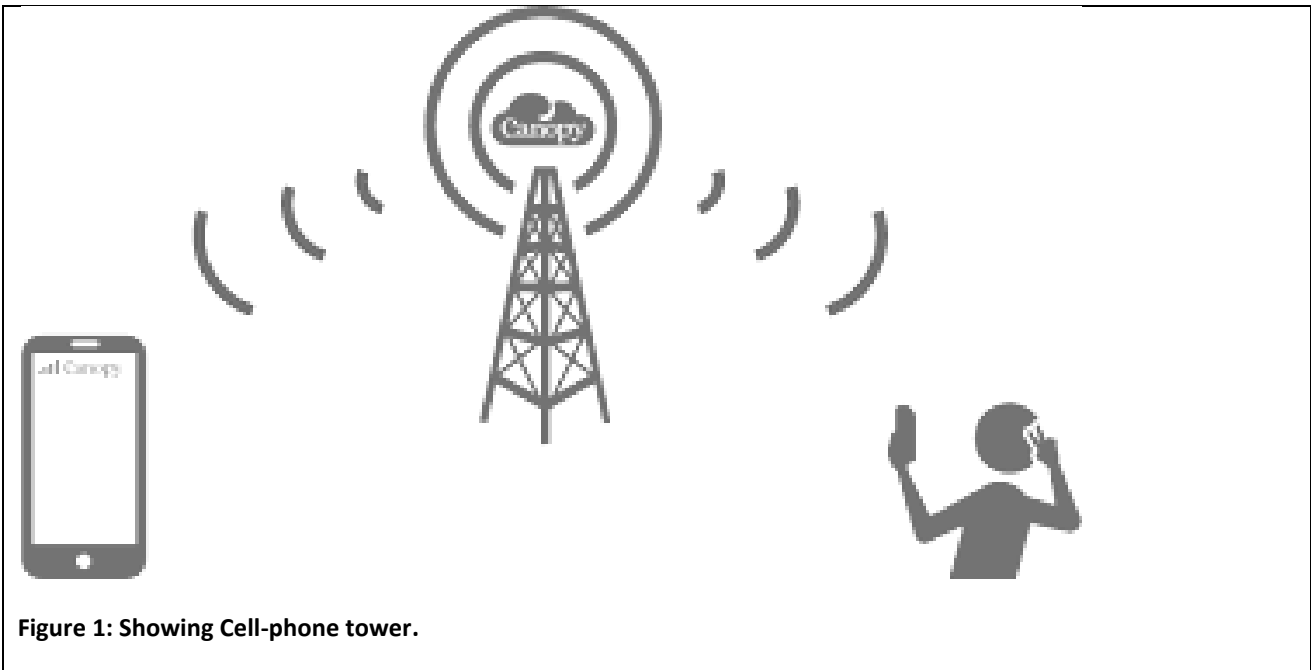


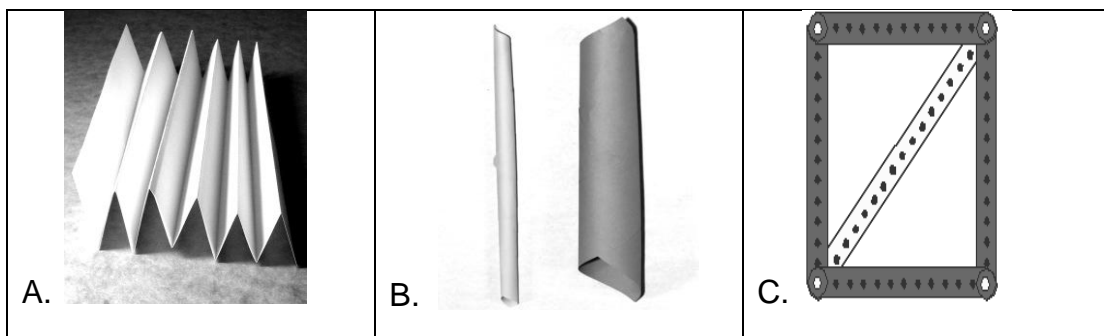
Figure 1: Showing Cell-phone tower.

Cell towers are important part of telecommunication infrastructure. In the past, we were limited by where we could communicate from and how. Now we can use cell-phone to send and immediately receive communications, all thanks to cell towers.



If you have a cell phone, then you interact with cell towers every day, even if we do not make any calls. Yet most of us do not realize how these critical components of our telecommunication networks work. Nor do we realize the vital role these towers play in our society.

QUESTION 1

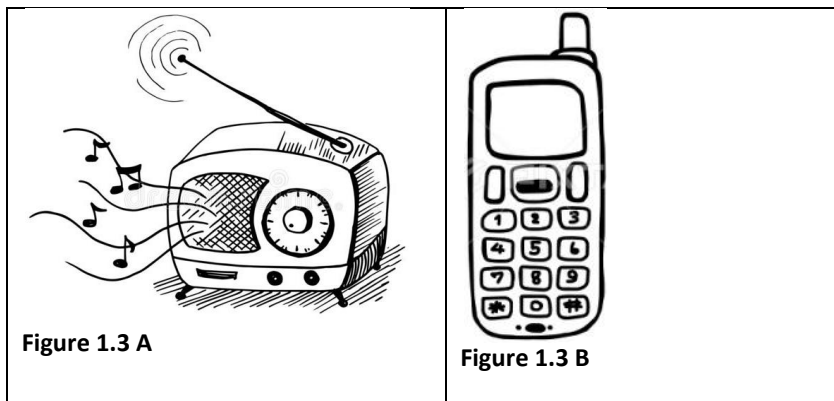
1.1 Grade 7 learners were required to use methods of stiffening material in their (3) cell-phone tower model. Identify the following methods of stiffening material:



1.2 Choose “Yes or No” on the functions of Telephone and Cell-phone table (6) below.

Functions	Telephone (Yes/No)	Cell-phone (Yes/No)
		
Send and receive phone calls.	1.2.1	1.2.2
Text Messaging	1.2.3	1.2.4
It can be carried anywhere	1.2.5	1.2.6

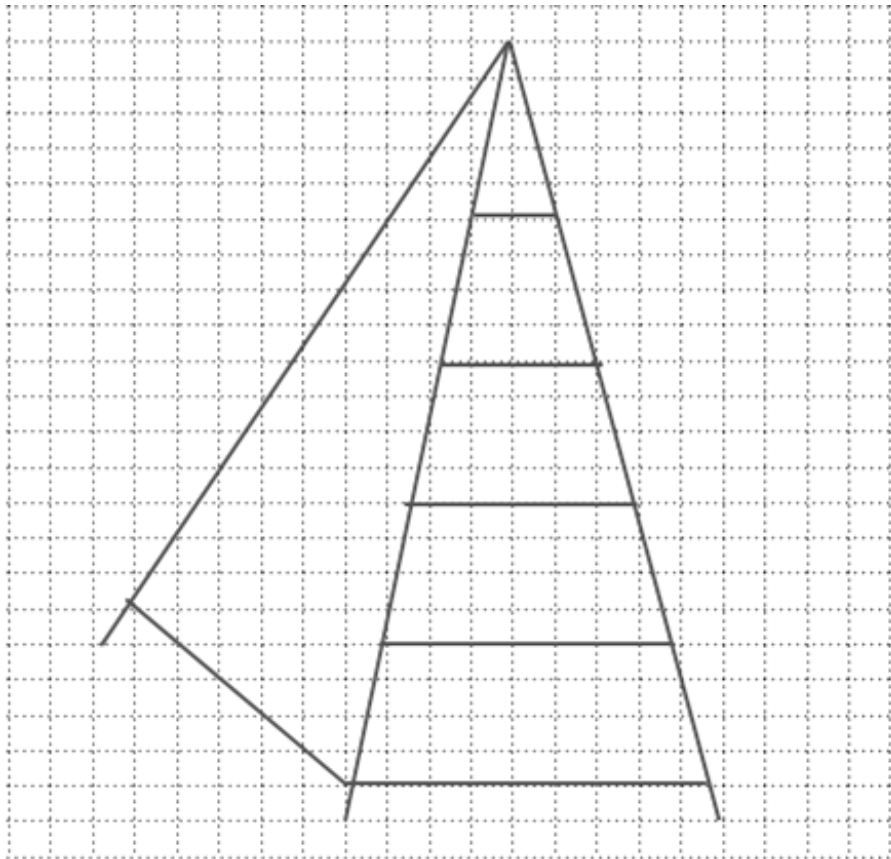
1.3 Study the pictures of FM radio and Cell-phone answer questions that follow.



1.3.1 Relate FM radio and Cell-phone by writing TWO common features found on both them. (2)

Learner Name: _____

1.4 Complete the design of cell-phone tower in Oblique drawing with reinforcement techniques. N.B Attach it to your answer sheet. (5)



RUBRIC: 3D OBLIQUE DRAWING OF CELL-PHONE TOWER					
Assessment Criteria	Marks 1	Marks 2	Marks 3-4	Marks 5	Learner's Mark
Cell-phone tower with strengthening techniques	Cell-phone tower drawing lacks any meaningful strengthening techniques.	Strengthening techniques is used incorrectly or inappropriately with little accuracy in cell-phone tower drawing.	Strengthening techniques is used correctly and with accuracy in cell-phone tower drawing.	Strengthening techniques is used correctly, most appropriately and with great accuracy in cell-phone tower drawing.	
				TOTAL	

1.5 Study the picture of school desk and write design brief with specifications. (5)



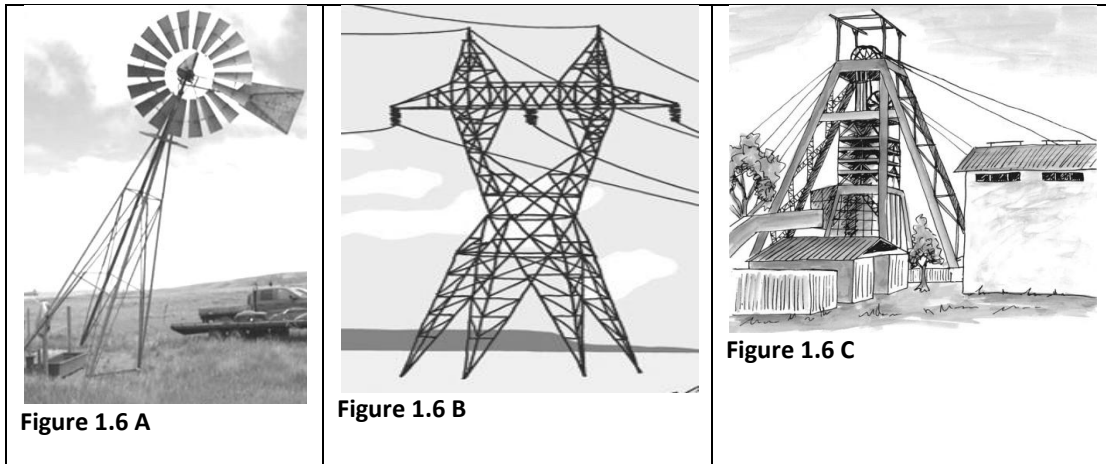
Hint: Start by writing: I am going to design and make...

State the following in your design brief:

- What are you going to design and make?
- For whom?
- How many users will be able to seat?
- Will it have shelf? If yes, how many?
- Which material will be used to make it?

RUBRIC: ASSESSMENT OF DESIGN BRIEF, SPECIFICATIONS AND CONSTRAINTS					
Assessment Criteria	Marks 1	Marks 2	Marks 4	Marks 5	Learner's Mark
Producing a design brief, specifications and constraints.	Unable to produce any meaningful work.	Attempts to produce but with limited success.	Produces a basic but satisfactory design brief, specifications and constraints.	Produces a well-conceived, detailed and creative design brief, specifications and constraints.	

- 1.6 Study the pictures of different frame structures and answer questions that follow.



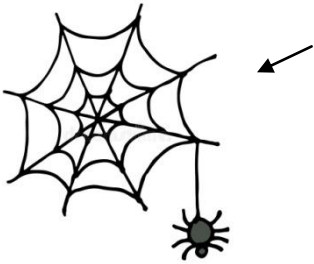
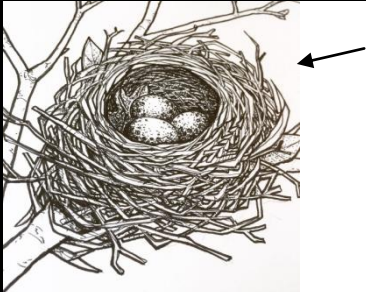
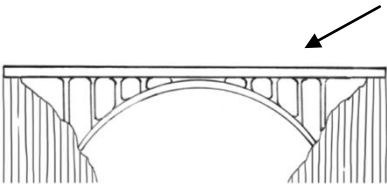
- 1.6.1 Find-out TWO methods used to reinforce frame structures. (2)
- 1.6.2 Identify and outline the purpose of structures on figure 1.6 A and 1.6 B (4)
- 1.6.3 Predict the most stable structure between structure on figure 1.6 A and 1.6 C. Support your answer. (3)

TOTAL SECTION A: 30

SECTION B

QUESTION 2

2.1 Complete the table below by filling in the purpose, classification and type of structure. Follow the example given. (6)

Pictures	Purpose	Classification	Type
Structure	<i>Protect/Contain/Support/ Span the gap</i>	<i>Natural/Man-made</i>	<i>Shell/Frame/Solid</i>
e.g. 	<p style="text-align: center;"><i>Span the gap</i></p>	<p style="text-align: center;"><i>Natural</i></p>	<p style="text-align: center;"><i>Frame</i></p>
	<p>2.1.1</p>	<p>2.1.2</p>	<p>2.1.3</p>
	<p>2.1.4</p>	<p>2.1.5</p>	<p>2.1.6</p>

2.2 Re-draw a figure and place the fulcrum (Δ) so that first class lever indicate mechanical advantage equals to ONE (MA=1) (2)



- 2.3 Re-draw a figure and place the fulcrum (Δ) so that first class lever indicate mechanical advantage less than ONE ($MA < 1$) (2)



- 2.4 Re-draw a figure and place the fulcrum (Δ) so that first class lever indicate mechanical advantage greater than ONE ($MA > 1$) (2)



- 2.5 Give the other name for fulcrum. (1)

- 2.6 Outline characteristics of the following classes of lever:

- 2.6.1 First class lever (2)

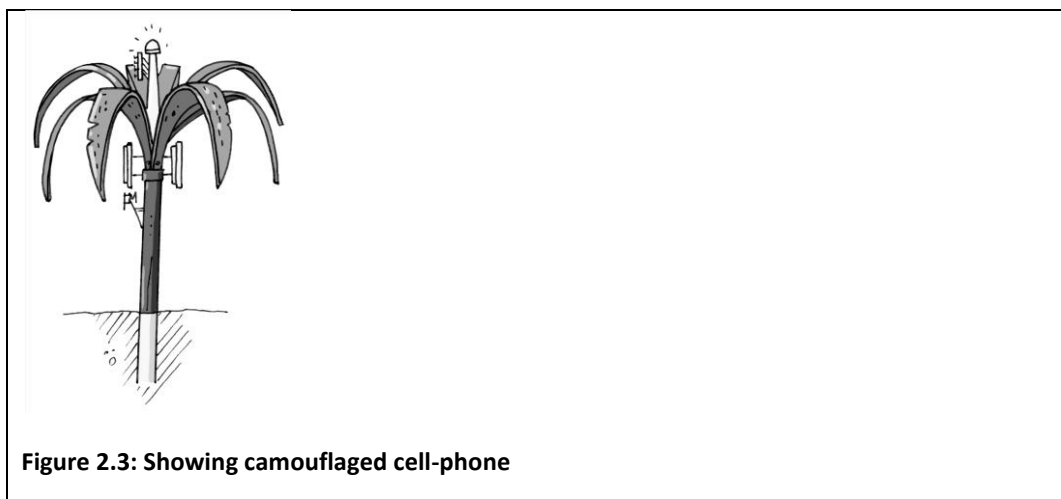
- 2.6.2 Second class lever (2)

- 2.6.3 Third class lever (2)

TOTAL SECTION B: 18

SECTION C**QUESTION 3**

- 3.1 According to your observation, who are most likely to use cell-phone between young and elderly people? Support your answer. (3)
- 3.2 Use your personal experience and write whether cell-phones are important in our day to day living or not. Give reason for your answer. (3)
- 3.3 Study the picture of camouflaged cell-phone tower and answer the question that follow.



- 3.3.1 Analyse whether it is relevant for designers to camouflaged cell-phone tower. Support your answer. (3)
- 3.4 Evaluate whether it is correct to throw used cell-phone battery/cell anywhere. Support your answer. (3)

TOTAL SECTION C: 12**GRAND TOTAL: 60**