

- 1) Give a suitable definition for the following:
 - 1.1 Guy Ropes
 - 1.2 Spanning Distance
 - 1.3 Simple Mechanism
 - 1.4 Shell Structure (4)

- 2) List any three steps of the design process. (3)

- 3) Name two ADVANTAGES of a cell phone and two DISADVANTAGES of a landline. (4)

- 4) Name a way of strengthening a structure. (1)

- 5) Name any two purposes of a structure. (2)

6) Identify the structures below by ticking the correct options.

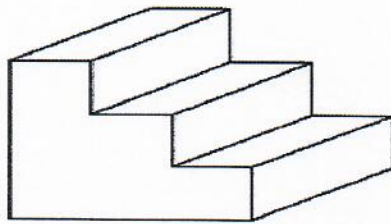
(Two ticks per structure.)

Structure	Frame	Solid	Shell	Man-made	Natural
6.1 Spider's Web					
6.2 Crane					
6.3 Plastic Bag					
6.4 Mountain					
6.5 Eiffel Tower					

(5)

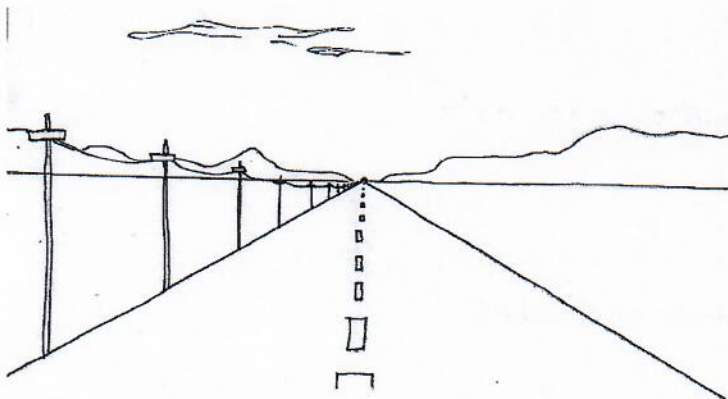
7) Look at and name the types of drawings seen below.

7.1



(1)

7.2



(1)

8) Problem scenario:

A school is situated next to an industrial area called Progress Industrial Park. The cell phone users in Progress Industrial Park have complained to their different service providers that they constantly lose signal and have poor reception. They especially battle to conduct video conference calls and their emails take tremendously long to download to their smartphones.

The cell phone provider, Cells-R-Us, has approached your principal to erect a cell phone tower at the bottom of the school property. This will be a wonderful way to make money for the school. The principal agreed, on three conditions:



- The tower must be far enough away from the classrooms to be safe for the children.
- The tower must not make the school look unsightly.
- The Grade 7's of the school should be given the opportunity to design the tower to reinforce what they have been learning in Technology.

With the information provided, answer the following questions.

- 8.1 Write a design brief for the cell phone tower. (2)
- 8.2 Name the three specifications (conditions) for the cell phone tower. (3)
- 8.3 Name any two constraints you might face. (2)
- 8.4 Which strengthening method would be suitable for a cell phone tower? (1)
- 8.5 What structure can you put around the tower to ensure children do not enter the premises? (1)