

GRADE 7 TECHNOLOGY TASK 10

TOTAL: 50 MARKS

DURATION: 60 MINUTES

QUESTION ONE

(5)

Define the following terms:

1.1. Triangulation

(1)

The use of triangles to strengthen a frame structure. ✓

1.2. Span

(1)

To go over / to extend from one side to another. ✓

1.3. Visual pollution

(1)

Visual pollution is anything which ruins what something looks like or it is so unattractive that it causes discomfort. ✓

1.4. Flexibility

(1)

The ability to bend without breaking ✓

1.5. Shell structure

(1)

Curved structures which transfer stress to their outer edge. ✓

QUESTION TWO

(21)

2.1. List FIVE examples of questions you should ask when you are creating a list of specifications for a product.

(5)

Who will use it? ✓ / What will it do? ✓ / What will it look like? ✓ / Where will it be used? ✓ / Will it damage the environment? ✓ / Will it be safe? / What will it cost? / How well will it work? / How long will it last? / How will it be produced?

(Any 5)

2.2. To know if something is a structure, it must have one or more specific purposes. Name and explain the FOUR purposes. (8)

Contain ✓ - hold in ✓

Protect ✓ - Keep safe ✓

Support ✓ - hold up, or help stand ✓

Span ✓ - to go over a gap/extend from one side to another ✓

2.3. Tabulate THREE advantages and disadvantages of cellular phones. (6)

<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
Ease of communication - can communicate easily with anyone, anywhere. ✓	Interruptions - cell phones can disrupt you from what you are doing. ✓
No long distance charges for calling someone in another province. ✓	Service - bad weather and software problems can cause poor reception causing the call to be disconnected. ✓
Safety in emergencies - you can easily contact someone for help ✓	Availability - some remote areas do not have cellular phone coverage. ✓

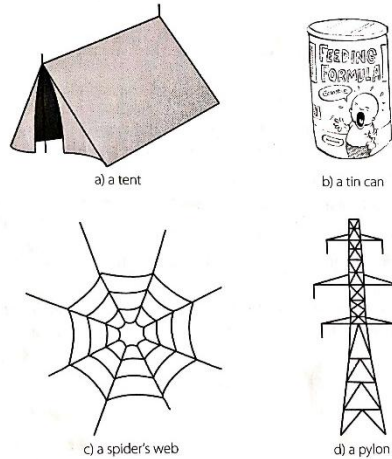
2.4. Differentiate between struts and ties. (2)

- Struts resist pushing/compressive forces. ✓
- Ties resist pulling/tensile forces. ✓

QUESTION THREE

(12)

- 3.1. For each picture (a-d) in Figure 2:
- State whether it is a natural or man-made structure.
 - State the type of structure (frame, shell or solid)
 - State the purpose of the structures.



Copy the table below and fill in your answers

	Natural or man-made	Frame, shell or solid	Purpose
Tent	Man made✓	Frame & shell✓	protect✓
Tin can	Man made✓	Shell✓	Contain & protect✓
Spider web	Natural✓	Frame✓	Span✓
Pylon	Man made✓	Frame✓	Support✓

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UR (8)

- 4.1. Name THREE ways in which you would strengthen a material. (3)

Tubing✓, folding ✓ and triangulation✓

- 4.2. Explain the difference between tension and compression forces. (2)

A tension force is caused by pulling✓ and a compression force is caused by pushing ✓

- 4.3. Evaluate the design of the bench below. Do you think it will be strong and sturdy? Would you make any changes? Explain your answer. (3)

It will be sturdy ✓ because of the triangulation on either side.✓ As a bench it is impractical - the top needs to be wider to make a good seat. ✓ (Any acceptable answer)

QUESTION FIVE

(4)

A cell phone company wishes to erect a cell phone tower in the rural area where you live. Discuss the impact of this. Mention at least 2 positive impacts and 2 negative impacts that the cell phone tower will have on this rural area. (4)

Positive impacts:

- People will be able to use the cellular network. ✓
- The coverage and accessibility will be good. ✓
- People will be able to communicate with their loved ones which will make them happy. ✓
- (Any 2)

Negative impacts:

- Construction will be disruptive to the community as there will be construction vehicles and noise. ✓
- Ecosystems will be damaged ✓
- Land for harvesting and grazing will be destroyed ✓
- (Any 2)