



Subject: Grade 8 Technology
Topic: Technology: Term 1 - Mini-Exam
Total: 101 Marks

Name: _____

Date: _____

Question 1: True/False

2 marks

A roof truss on a house is an example of a shell structure as it is on the outside of the house.

TRUE

FALSE

Question 2: Text Input

3 marks

When an object is resized in a drawing the term ... up or down is used to describe the size of the real object in comparison to the technical drawing.

Note: One word answer.

Question 3: True/False

2 marks

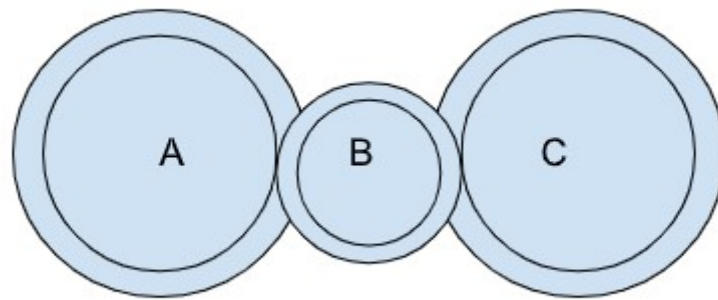
Dynamic forces and **static** forces are the two basic types of forces which act on structures.

TRUE

FALSE



This image refers to question: 4



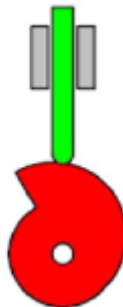
Question 4: Multiple Choice

4 marks

Select the *incorrect* statement about gears.

- | | |
|----------|---|
| A | An idler gear is a third gear wheel between two gears which functions to make the gears move faster. |
| B | Spur gears are two gears meshed together which turn in opposite directions. |
| C | If a driver gear is larger than a driven gear then less input force is required and the smaller gear will turn faster. |
| D | Gear ratio is the relationship between the number of teeth on the driver and driven gears and is the force with which the gears turn. |

This image refers to question: 5



Question 5: True/False

2 marks

The machine shown in this image is called a crank.

TRUE

FALSE

This image refers to question: 6



Question 6: Please Fill In The Blanks

8 marks

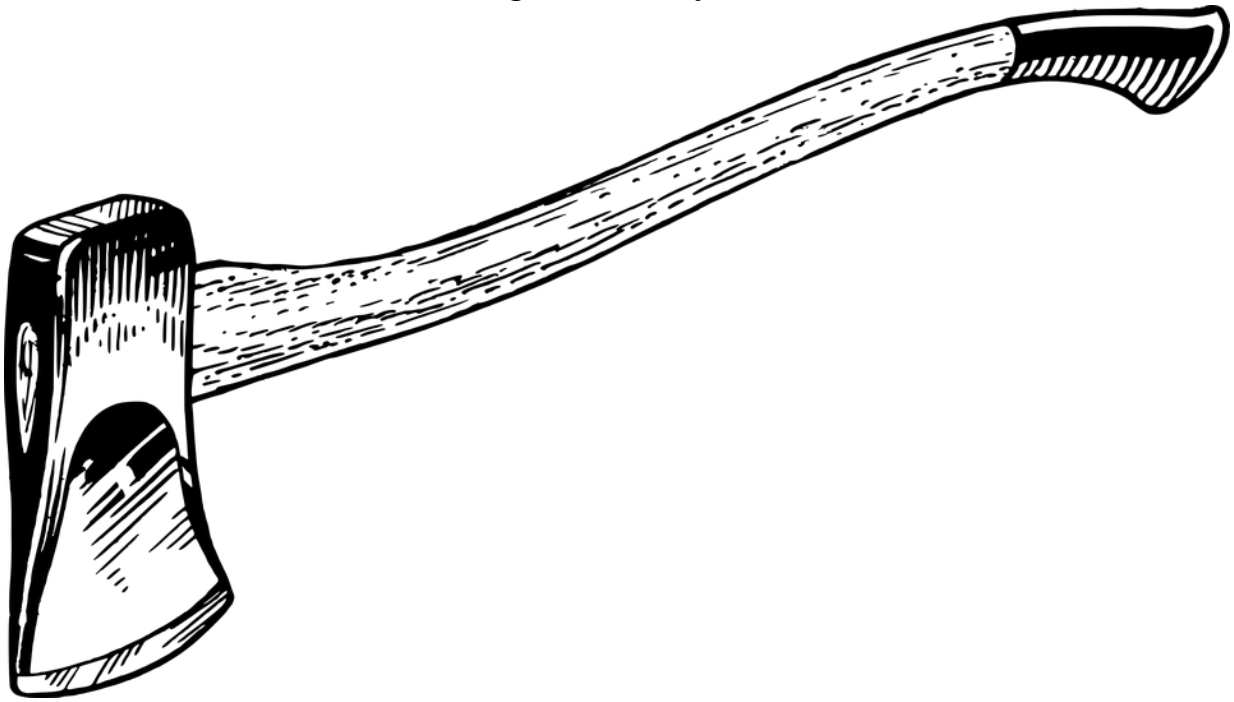
The wheel and axle is an example of a (1) machine. An axle is a rod or (2) on which the wheel turns. A door (3) is also an example of this machine. The (4) is inside the door.

Possible Answers: knob | wheel | axle | wedge | complex | shaft | simple | hinge

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This image refers to question: 7



Question 7: Text Input

3 marks

There are 6 simple machines. An axe and a chisel are both examples of a ... mechanical system.

Note: Your answer should be one word.

This image refers to question: 8



Question 8: True/False

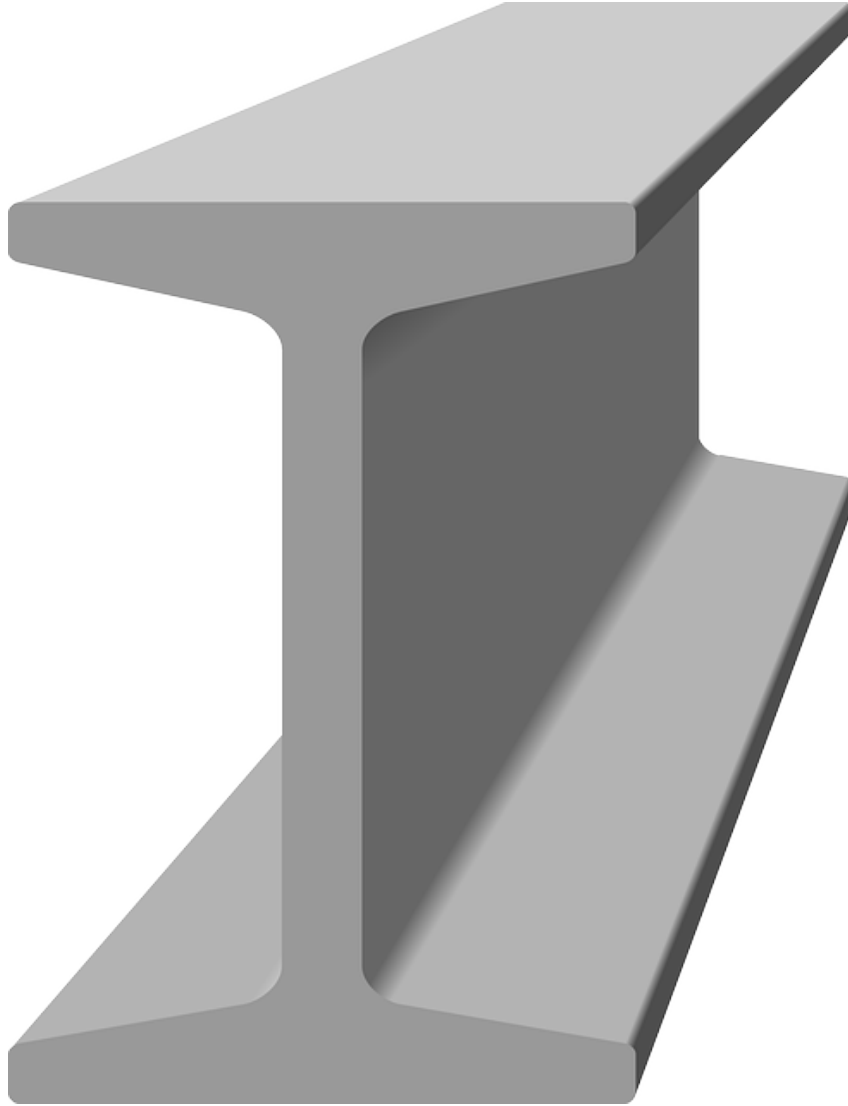
2 marks

The simple machine in this image shows a spur gear train.

TRUE

FALSE

This image refers to question: 9



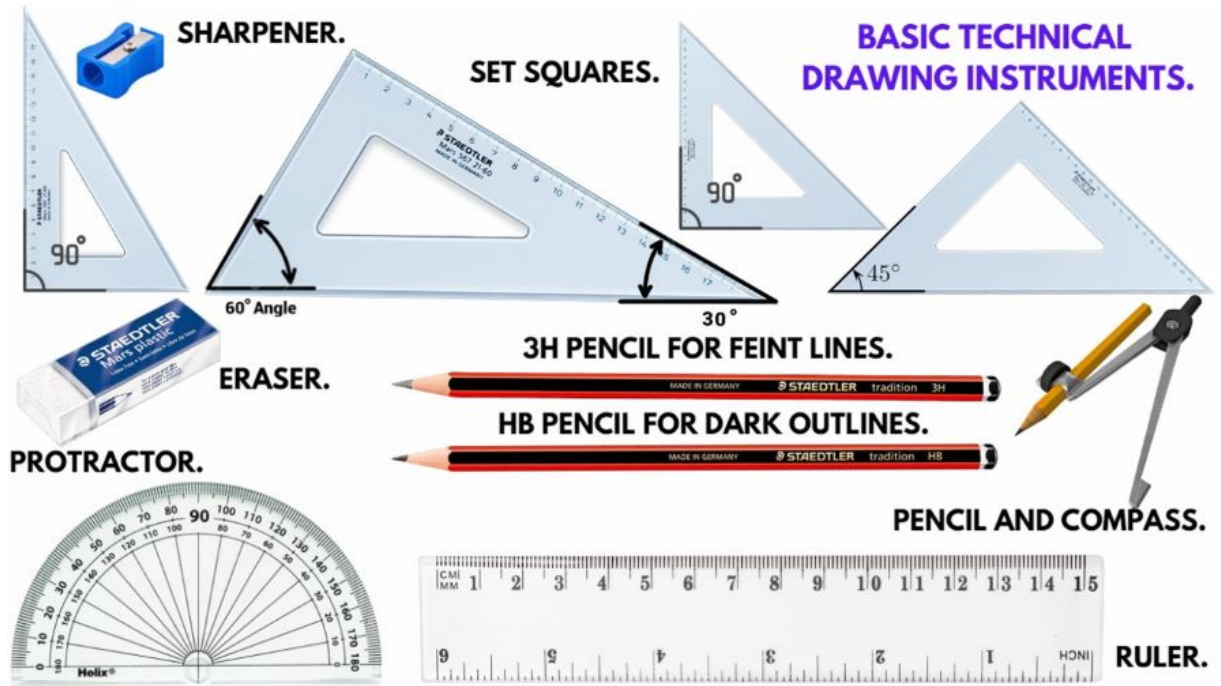
Question 9: Text Input

3 marks

What is the name given to these horizontal metal bars, which are commonly used to construct large structures to resist forces, specifically bending and shearing?

Note: Your answer must be one word with a hyphen.

This image refers to question: 10



Question 10: Text Input

3 marks

Which set square angle is used to construct an Isometric projection?

30° or 60° or 45°

Note: Write down the numeric value only in your answer.

This image refers to question: 11



Question 11: Text Input

3 marks

This dome is part of the Eden Project gardens in Cornwall in the United Kingdom. Is this an example of a **shell** or **frame** structure?

Note: One-word answer.

Question 12: True/False

2 marks

Structural failure is a method of testing a building's strength.

TRUE

FALSE

Question 13: Please Fill In The Blanks

6 marks

An (1) projection is a drawing constructed on a 30° angle. It is a (2) dimensional drawing which shows the width, (3) and height dimensions of an object.

Possible Answers: depth | isometric | orthographic | shape | three | two | one

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Question 14: Please Fill In The Blanks

8 marks

Pylons are large structures which support electricity cables to transport electricity across the country. It is important that these structures cannot easily be (1) by people for safety reasons. (2) must be able to pass through the pylons to ensure they do not blow over in extreme weather conditions. (3) is used to ensure these tall structures are stable. Electricity pylons are usually made from wood, concrete or (4) .

Possible Answers: PVC | electricity | trusses | repaired | steel | triangulation | climbed | wind

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Question 15: True/False

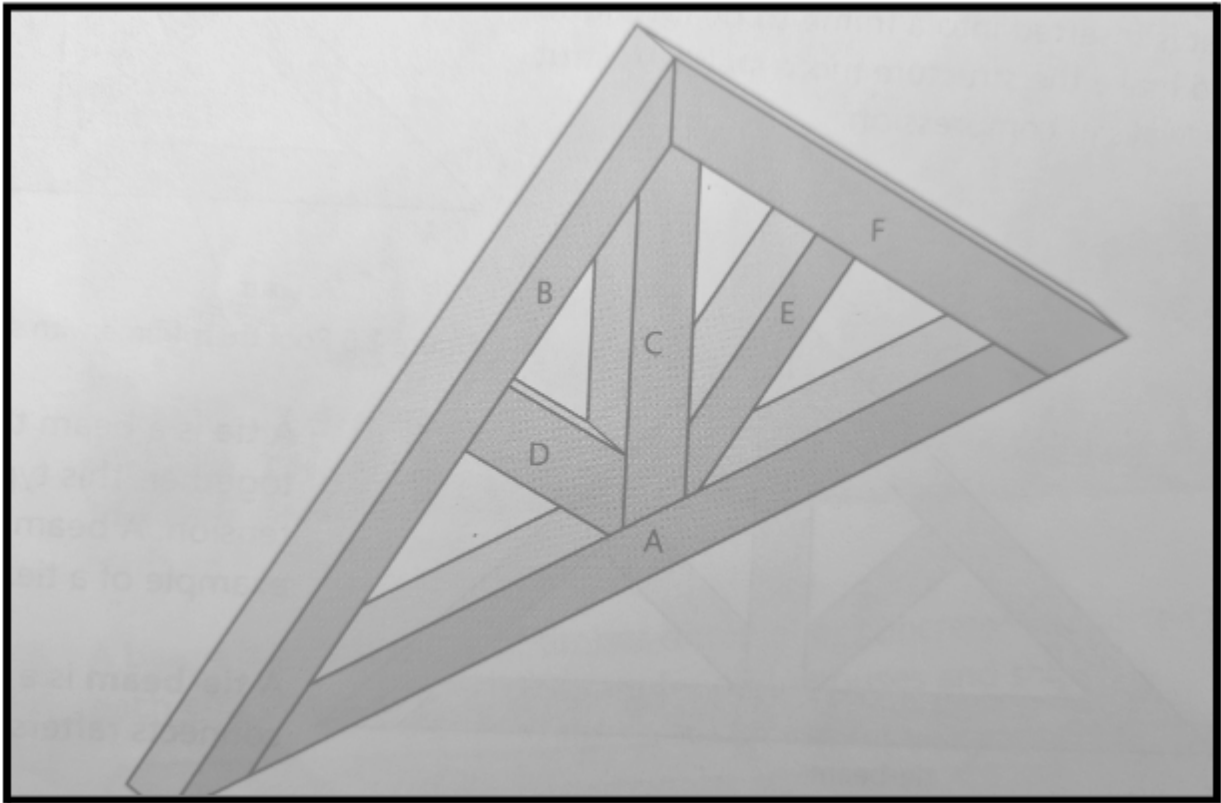
2 marks

A working drawing is usually a 2D orthographic projection which has dimensions added to it.

TRUE

FALSE

This image refers to question: 16



Question 16: Multiple Choice

4 marks

The correct labels for components A to D on this roof truss are:

- | | |
|----------|--|
| A | A - king post, B - rafter, C - queen post, D - strut. |
| B | A - tie-beam, B - rafter, C - king post, D - strut. |
| C | A - rafter, B - tie-beam, C - king post, D - principal rafter. |
| D | A - strut, B - tie-beam, C- king post, D - queen post. |

Question 17: True/False

3 marks

Rendering an artistic drawing to make it look realistic includes shading and using light and shadow to show texture.

TRUE

FALSE

Question 18: Please Fill In The Blanks

8 marks

A cable-stayed bridge consists of a tall (1) anchored in the ground with cables that are in (2). The traffic drives on the (3) of the bridge which is in (4) .

Possible Answers: deck | torsion | compression | anchor | pressure | column | hanger | tension

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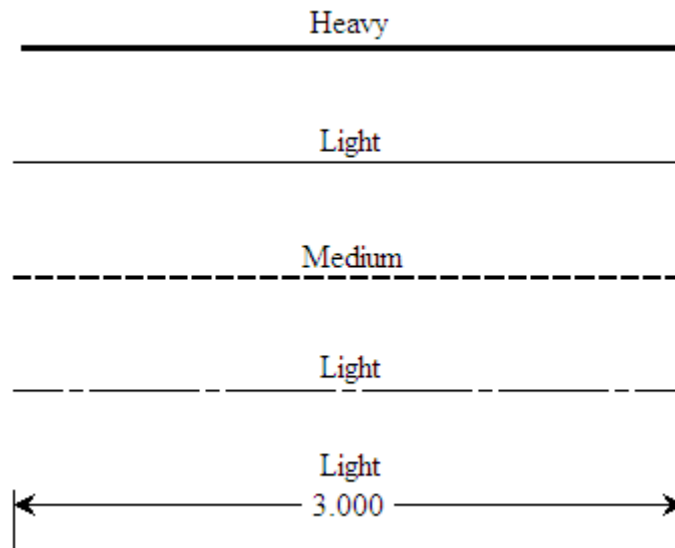
Question 19: Multiple Choice

4 marks

Which of these does not describe the main ways that structural failure occurs?

- | | |
|----------|------------------------------------|
| A | Tension, shearing, compression. |
| B | Toppling over, tension, fractures. |
| C | Fractures, toppling over, bending. |
| D | Bending, fractures, spanning. |
-

This image refers to question: 20



Question 20: Multiple Choice

4 marks

Which is the correct order to describe these line types used in technical drawings, listed from top to bottom?

- | | |
|----------|---|
| A | Construction line, outline, centre line, dimension line, hidden detail. |
| B | Outline, construction line, hidden detail, centre line, dimension line. |
| C | Outline, construction line, centre line, hidden detail, dimension line. |
| D | Hidden detail, construction line, centre line, dimension line, outline. |

Question 21: Text Input

3 marks

Which two words are used to describe the benefit gained from using machinery?

Question 22: Multiple Choice

4 marks

Which of these is not an advantage of a suspension bridge?

- | | |
|----------|---|
| A | Suspension bridges are simple and cost effective to build. |
| B | Suspension bridges can span very long gaps and cross wide valleys or rivers. |
| C | Suspension bridges can also be built with two decks so that trains and cars can run on the same bridge. |
| D | Suspension bridges can be built along curved routes. |

Question 23: Please Fill In The Blanks

6 marks

Cantilever bridges are supported at (1) end/s. The cantilever sticks out into space and the two ends meet in the middle.

Simple cantilevers are also used to construct (2) that stick out from blocks of flats or offices.

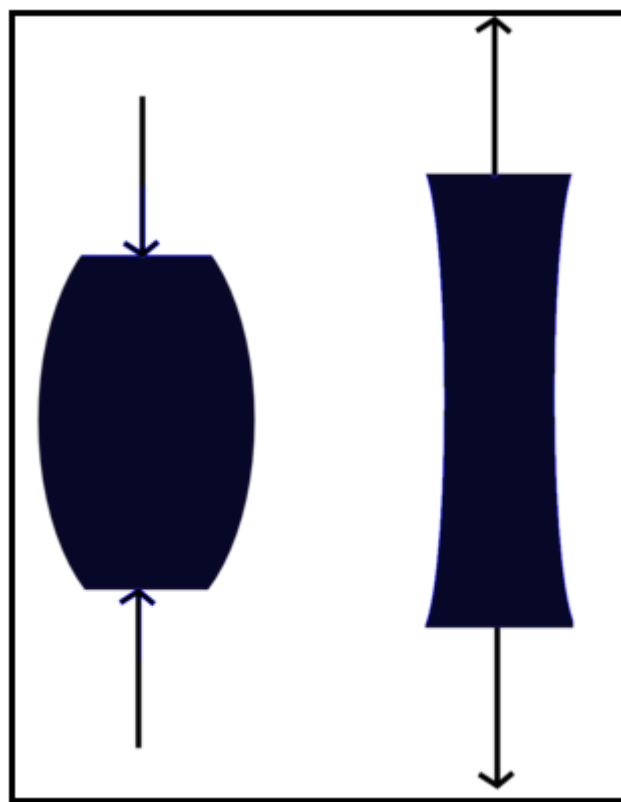
Many long (3) bridges are also constructed using two cantilevers with a beam suspended in between.

Possible Answers: chimneys | suspension | one | cable-stayed | balconies | both

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This image refers to question: 24

**Question 24: Multiple Choice**

4 marks

Which two types of forces are acting on the objects shown in this image?

- | | |
|----------|-------------------------|
| A | Torsion and tension |
| B | Compression and bending |
| C | Tension and shearing |
| D | Compression and tension |

Question 25: Please Fill In The Blanks

8 marks

- The purpose of dimension lines is to ensure that products are built (1) .
- Dimension lines are drawn with (2) and short dimension lines at each end.
- The values on dimension lines are always given in (3), although the unit is not written down.
- Dimension lines are usually found on (4) drawings.

Possible Answers: mm | from the right materials | arrowheads | points | to the correct size | artistic | cm | working

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Total: 101 Marks