

RAMOTSHERE MOILA AREA OFFICE

TECHNOLOGY

TERM 1 TEST

MARCH 2018

GRADE 9

MEMORANDUM

MARKS: 60

DURATION: 2 Hrs.

INSTRUCTIONS:

1. Answer all the questions.
2. Write neatly and legibly.
3. All answers must be written in the space provided in the question paper.
4. Follow instructions promptly.
5. All drawings must be in pencil, neat and fully labelled.
6. Colored pencils may be used only for shading where required.

This question paper consists of 10 pages





QUESTION 1

1.1 Circle the correct answer from the ones given below.

(5)

1.1.1 When creating a drawing, various line types are used.

Which of the following will be used for centre lines?

- A. 
- B. 
- C. 
- D. 

1.1.2 What scale is correct when creating a drawing at half the original size?

- A. 1:2
- B. 1:5
- C. 1:1
- D. 2:1

1.1.3 When a moving load is acting on a structure, it is said to be_____.

- A. Heavy
- B. Tied down
- C. Dynamic load
- D. Static load

1.1.4 A design brief is an indication of:

- A. The problem the customer has
- B. Questions the designer must ask the client
- C. What the designer is going to do to solve the problem
- D. The cost of the building

1.1.5 At what stage is a design brief compiled?

- A. During the building stage.
- B. During the planning stage at the start of the project
- C. When ordering materials.

D. When the project is complete.

1.2 Answer true or false

(5)



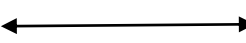

1.2.1 A dotted line is used to show hidden features on a drawing. TRUE1.2.2 Orthographic projection is used to show various views of a part. TRUE1.2.3 The pillars of a bridge is under tensile stress: FALSE1.2.4 The design of stairways has to conform to building regulations: TRUE1.2.5 A design brief is written by the client: FALSE

QUESTION 2

(8)

Give the names and descriptions of the following line types as used on drawings.

The answer should be written in the table as per sample.

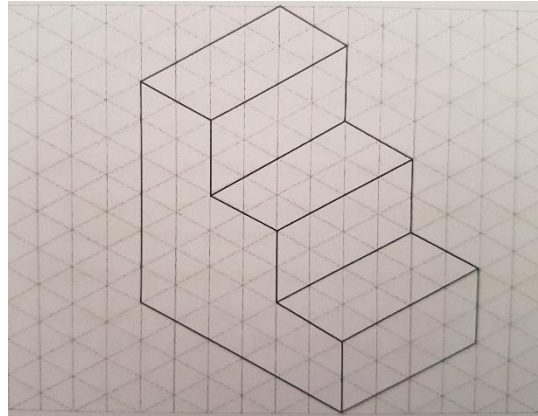
Line convention	Name of line / Type	Property
Eg. _____	<i>Construction line</i>	<i>very thin and continuous</i>
	OUTLINE	THICK AND CONTINUOUS
	DOTTED LINE	THIN AND INTERRUPTED
	LIMIT/DIMENSION LINE	THIN AND CONTINUOUS
	CENTRE LINE	THIN AND INTERRUPTED

QUESTION 3

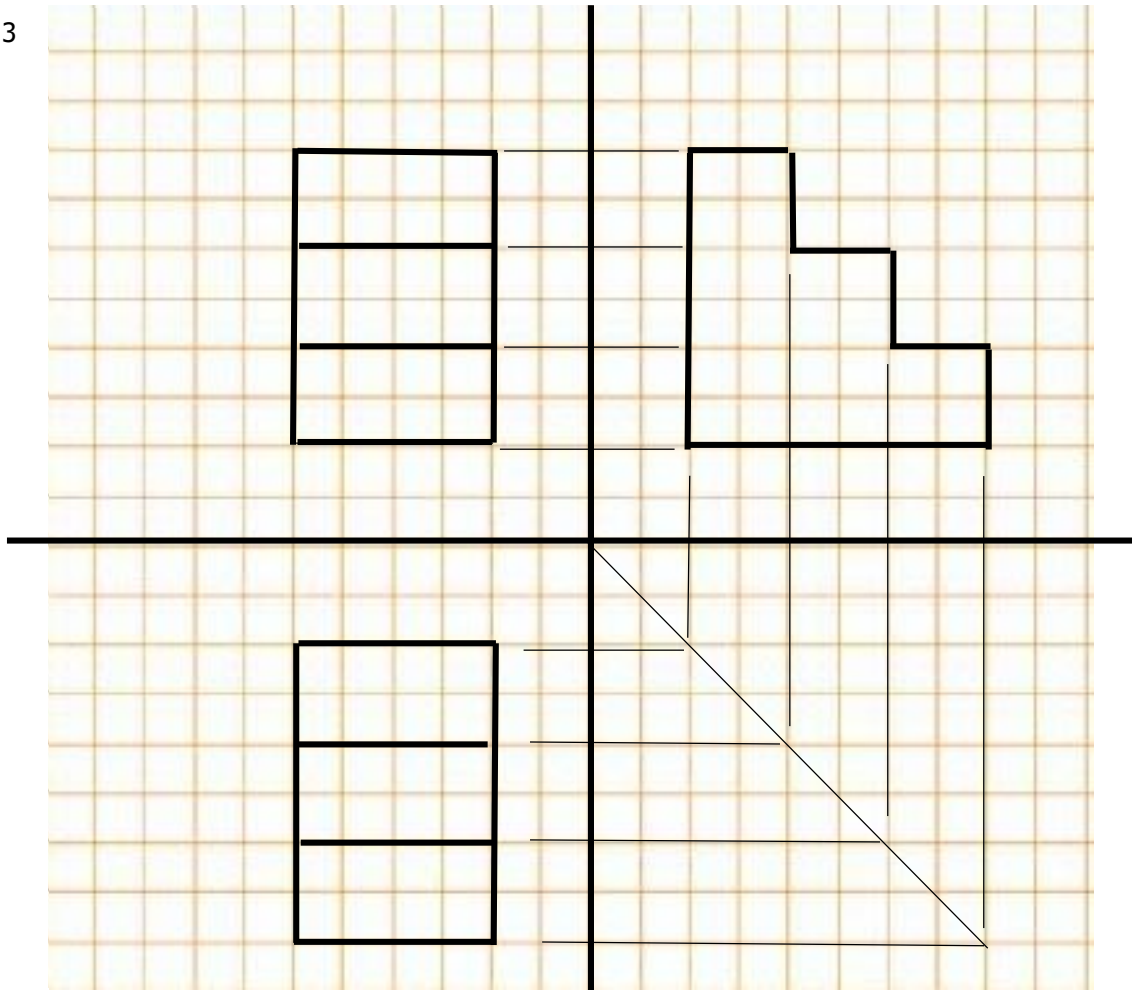
(18)

Draw the stairs shown below in first angle orthographic projection.

Use the grid provided. The front view is already shown. Add the left view and top view.



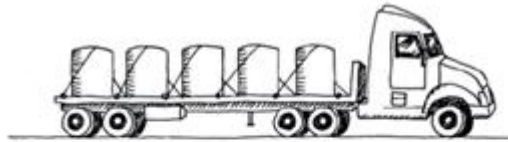
3



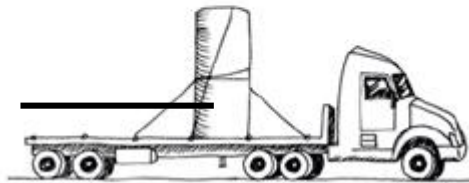
QUESTION 4

Observe the loads on truck A and B and answer the questions

Truck A



Truck B



Complete the statements using the following words: Static, Even , Uneven , Dynamic, Heavy

(2)

4.1 The force exerted by the load onto the truck A is called a STATIC force and the load is Distributed EVEN across the entire trailer.

4.2 The load on truck B is said to be an UNEVEN load and the force between load and trailer is also STATIC.

4.3 If the truck is moving, the force exerted by the wheels onto the road is called a DYNAMIC force. (1)

4.4 When a structural member is under load, it can experience 3 types of forces. (3)

Name them: 1. TENSION/TENSILE

2. COMPRESSION/COMPRESSIVE

3. TORSIONAL/TORSION

QUESTION 5

Read the following scenario:

A rural community in the Northwest province has been cut off from the school by a deep donga which is frequently flooded when it rains. On one side of the donga is the school and shops and on the other side, the homes. It is difficult and dangerous for everyone to do this crossing.

You have been asked to plan and design a low cost bridge for pedestrians at a point where the donga is 6 metres wide.

5.1 Identify the problem in the scenario above (2)

The people cannot safely get to school and shops from their home. When it rains the donga is in flood. There is no bridge to cross over.

5.2 Write a design brief for a solution to the problem in the scenario above. (2)

I will design and build a bridge that is cheap and easy to build. The bridge will be 6 metres long and build from wood and ropes

5.3 Name 1 reason why crossing the donga is dangerous. (2)

People can drown when the donga is flooded. They can also get injured when trying to go through when it is dry

5.4 What negative effect does a bridge have on the environment (1)

It is an unnatural crossing but should not have any negative effect

5.5 Name TWO types of materials that you would use for the bridge. (2)

Wooden planks and poles and rope.

5.6 Suggest two ways in which the problem can be solved. (2)

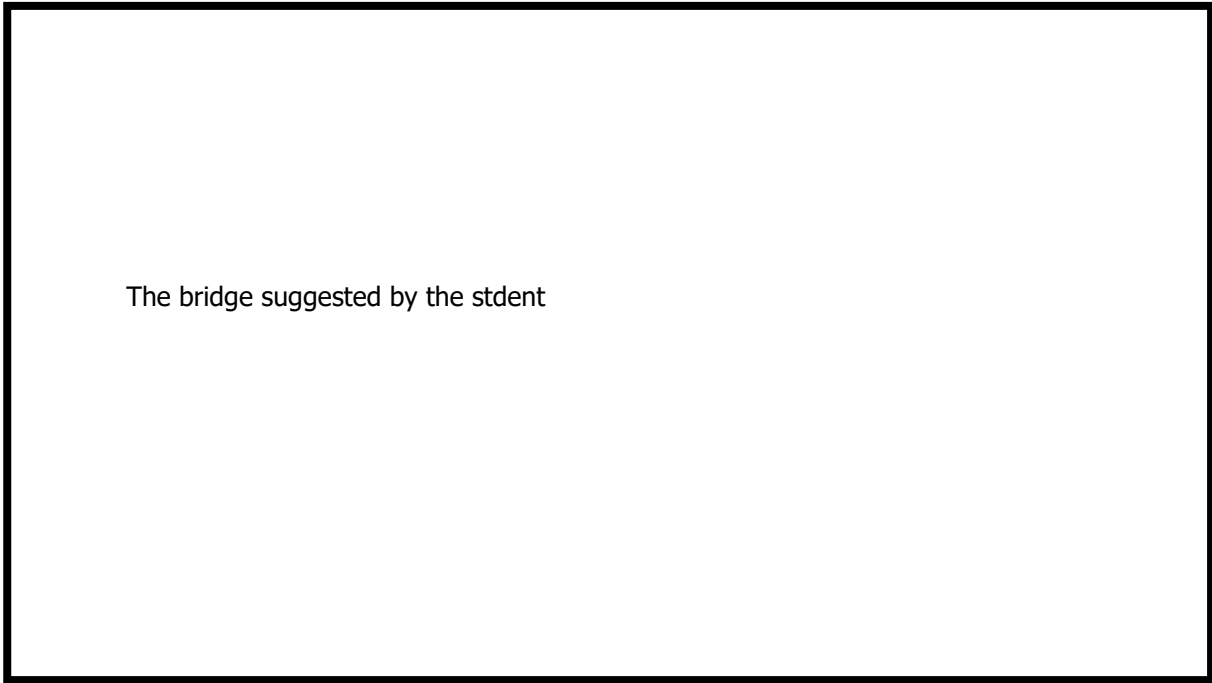
Build a hanging bridge or a concrete bridge

5.7 What is the indigenous way to solve this problem? (1)

They used to make a bridge out of huge stones if available.

5.7 Draw a rough sketch, in the box below, to show how you would solve the problem. (4)

Add one or two dimensions to your sketch.



The bridge suggested by the student

Grand Total (60)