



Education and Sport Development

Department of Education and Sport Development
Departement van Onderwys en Sportontwikkeling
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NORTH WEST PROVINCE

NORTH WEST PROVINCIAL ASSESSMENT

GRADE 9

TECHNOLOGY
NOVEMBER 2018

MARKS: 120
TIME: 2 Hours

This question paper consists of 10 pages.

INSTRUCTIONS TO LEARNERS

1. Read ALL the instructions carefully
2. Answer ALL the questions
3. Write neatly and legibly

Resources needed for drawing

1. Pencil (HP)
2. Eraser/rubber
3. Calculator

QUESTION 1

SA 1-3

1.1 Choose the correct answer from the ones given below. Write the letter of the correct answer next to the question number. Example 1.3.2 A

1.1.1 Which one of the following drawings shows 2D shape?

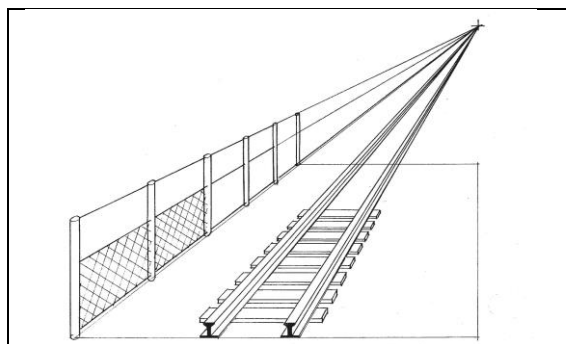
- A Oblique drawing.
- B Orthographic drawing.
- C Isometric drawing.
- D Perspective drawing. (1)

1.1.2 Statement that describes how the designer intends to solve problem is called...

- A Evaluation.
- B Design process.
- C Communication
- D Design brief. (1)

1.1.3 The object below is drawn in which of the following drawings?

FIGURE 1



- A Oblique drawing
- B Isometric drawing
- C Perspective drawing
- D Orthographic drawing (1)

1.1.4 The lines indicating that a certain part of the drawing cannot be seen.

- A Construction line
- B Hidden detail
- C Straight and solid lines
- D Dark and continuous line (1)

1.1.5 The solution in technology is assessed against its...

- A specifications.
 - B Investigation.
 - C making plan.
 - D Communication. (1)
- [5]**

1.2 State whether the following statements are true or false.

1.2.1 The isometric, oblique and orthographic are all 3D drawings. (1)

1.2.2 Design is the third stage of technological process. (1)

1.2.3 Galvanization prevents corrosion. (1)

1.2.4 Scale 1:100 is a decreasing scale. (1)

1.2.5 Capacitor is one of electronic components that stores electricity. (1)

[5]

QUESTION 2

2. Match the sentences below with the correct word from the bracket.
Write only the number and the correct word next to it.

Pascal's Principle, budget, safety measure, Pneumatics,Hydraulic, Ohms law, Investigate, specifications, flow chart, unsafe act
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2.1.1 The system that uses liquid to transfer motion is known as ... (1)






2.1.2 Planning about which materials and tools to buy and their cost price. (1)

2.1.3 The pressure exerted in liquid at a particular area in a closed system is
equally distributed though out. (1)

2.1.4 When a learner injure him/herself in technology classroom is because he ignored ... (1)

2.1.5 Current flows though the circuit is directly proportional to potential difference and inversely proportional to the resistance. (1)
[5]

2.2 Technology design requires the use of different line types to communicate DESIGN ideas. Match the line types in Column A with their uses in Column B. Write ONLY the number and the use.

Column A: Line types	Column B: Use
2.2.1 Thick continuous line 	A Short break lines and irregular boundary lines
2.2.2 Thin continuous line 	B Center line. Used to show where the center of symmetrical object is.
2.2.3 Thin short dashes 	C Hidden outlines.
2.2.4 Thick wavy line 	D Visible outlines and edges
2.2.5 Thin long chain 	E Dimension lines, projection lines and outlines of adjacent parts. This line is normally drawn to begin to make a drawing.

[5]

QUESTION 3**STRUCTURE, DESIGN PROCESS & SAFETY: SA1-3**

Look at the structure of the company below and answer questions that follow.



- 3.1 Where do we commonly find this type of structure? (2)
- 3.2 What is the purpose of this structure? (2)
- 3.3 Which material may be used when building this structure? (2)
- 3.4 What type of reinforcement strategy is used in the this structure (2)
- 3.5 People working here need specific clothing for safety reasons, name any THREE types of safety gear that may be relevant for them. (3)
- 3.6 List any THREE types of careers relevant for workers on this environment. (3)
- 3.7 Set any THREE specifications that may be relevant for this structure. (6)
- 3.8 Name any THREE factors that may cause this structure to fail. (6)

3.9 Think and set any THREE precautionary measures that the company must do for workers to be safe in this environment. (6)

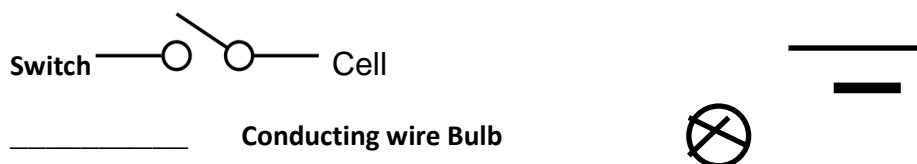
3.10 Name THREE ways in which the company of this structure may benefit the community around? (6)

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QUESTION 4

SYSTEM AND CONTROL (ELECTRICAL)

4. You are given the electronic components below and you are asked to build a simple circuit as follows.



4.1 Connect one cell in series; one bulb in series and two switches in parallel using conducting wires. See components above and draw the circuit you have built. (4)

4.2 What type of a logic gate is this circuit? (2)

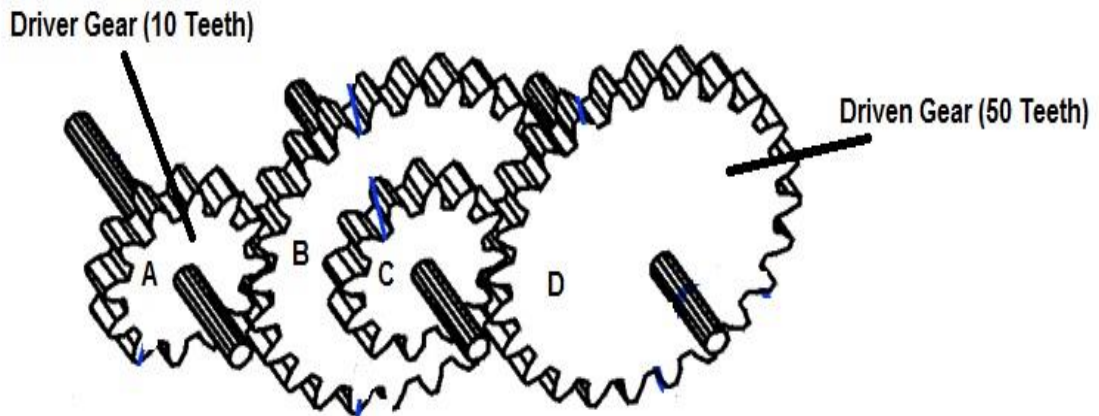
4.3 Complete the truth table below about your circuit diagram. (4)

A	B	OUTPUT
1	0	
0	1	
0	0	
1	1	

[10]

QUESTION 5**SYSTEM AND CONTROL (MECHANICAL) (SA2)**

5. Gear B and C are mounted on a central shaft and they rotate at the same speed/as a unit. Gear A is the driver and gear D is driven.



- 5.1 If gear A rotates in a clockwise direction, to which direction will gear C rotate? (2)
- 5.2 If gear B rotates in an anti-clockwise direction, to which direction will gear C rotate? (2)
- 5.3 Calculate the gear ratio of the system (6)
- 5.4 Draw the systems diagram of the above mechanism (6)

[16]

QUESTION 6

(PROCESSING) SA 1-3

6. Study the picture below and answer the following questions

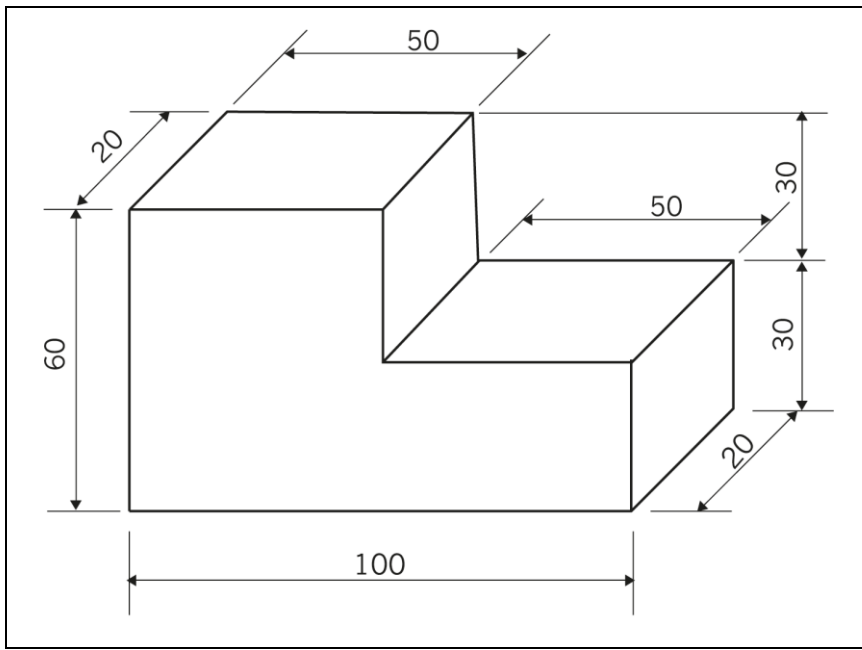


- 6.1 From the picture above, what do you think the problem is with the material found in this area? (2)
- 6.2 Write a design brief of solving a problem like this. (2)
- 6.3 Name any THREE materials that can be found in this environment (3)
- 6.4 List any THREE dangers that this community is exposed to if the environment is left like this.
- 6.5 What is the difference between **re-use** and **recycling** of material and give practical example to explain each? (4)
- 6.6 Give TWO Advantages of recycling these materials. (4)
- 6.7 List any TWO dangers that this community may be exposed to if they burn the material instead of recycling them. (4)

[25]

QUESTION 7

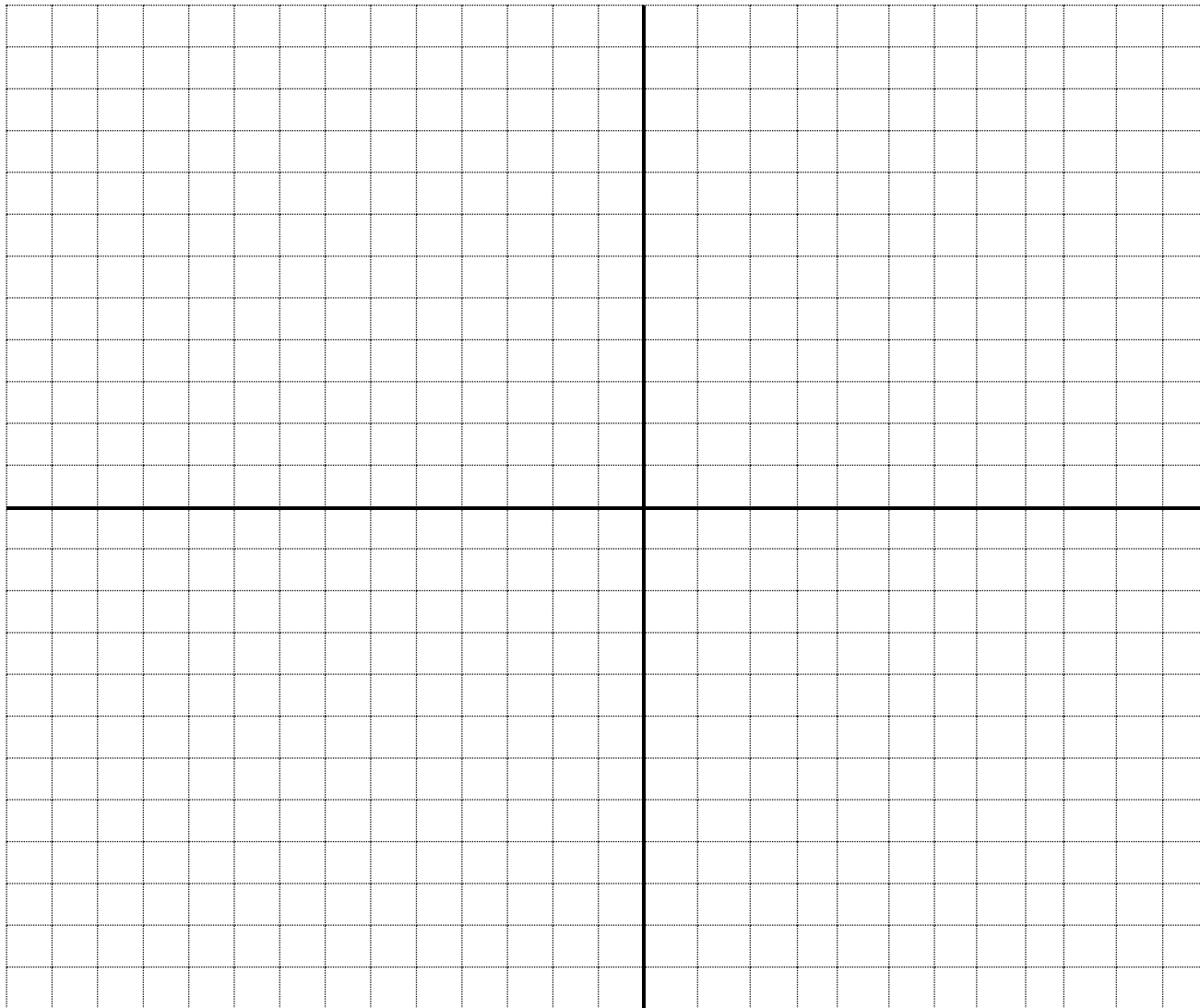
Draw an object below in First Angle Orthographic projection using the grids below and correct measurements [1Block: 10 mm]. Show the Top view, Front view and the Left view. NB: use the left view as front view

[10]

ANSWER SHEET FOR QUESTION 7

[10]

NAME: _____ SCHOOL: _____



Rubric for Question 7

Criteria	Total	Mark allocation
Correct placement of views	2	
Correctness of Front view	2	
Correctness of Side view	2	
Correctness of Top view	2	
Neatness	2	

GRAND TOTAL: 120