



## **Education and Sport Development**

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Departement van Onderwys en Sportontwikkeling  
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**NORTH WEST PROVINCE**

**NORTH WEST PROVINCIAL**

**ASSESSMENT**

**GRADE 9**

**TECHNOLOGY**

**MEMORANDUM**

**NOVEMBER 2016**

**MARKS: 120**

**This memorandum consists of 7 pages.**

**QUESTION 1.1**

1.1.1	B	√
1.1.2	C	√
1.1.3	B	√
1.1.4	D	√
1.1.5	B	√
1.1.6	D	√
1.1.7	C	√
1.1.8	C	√
1.1.9	A	√
1.1.10	D	√

(10)

**QUESTION 1.2**

1.2.1	True	√
1.2.2	False	√
1.2.3	True	√
1.2.4	True	√
1.2.5	False	√

(5)

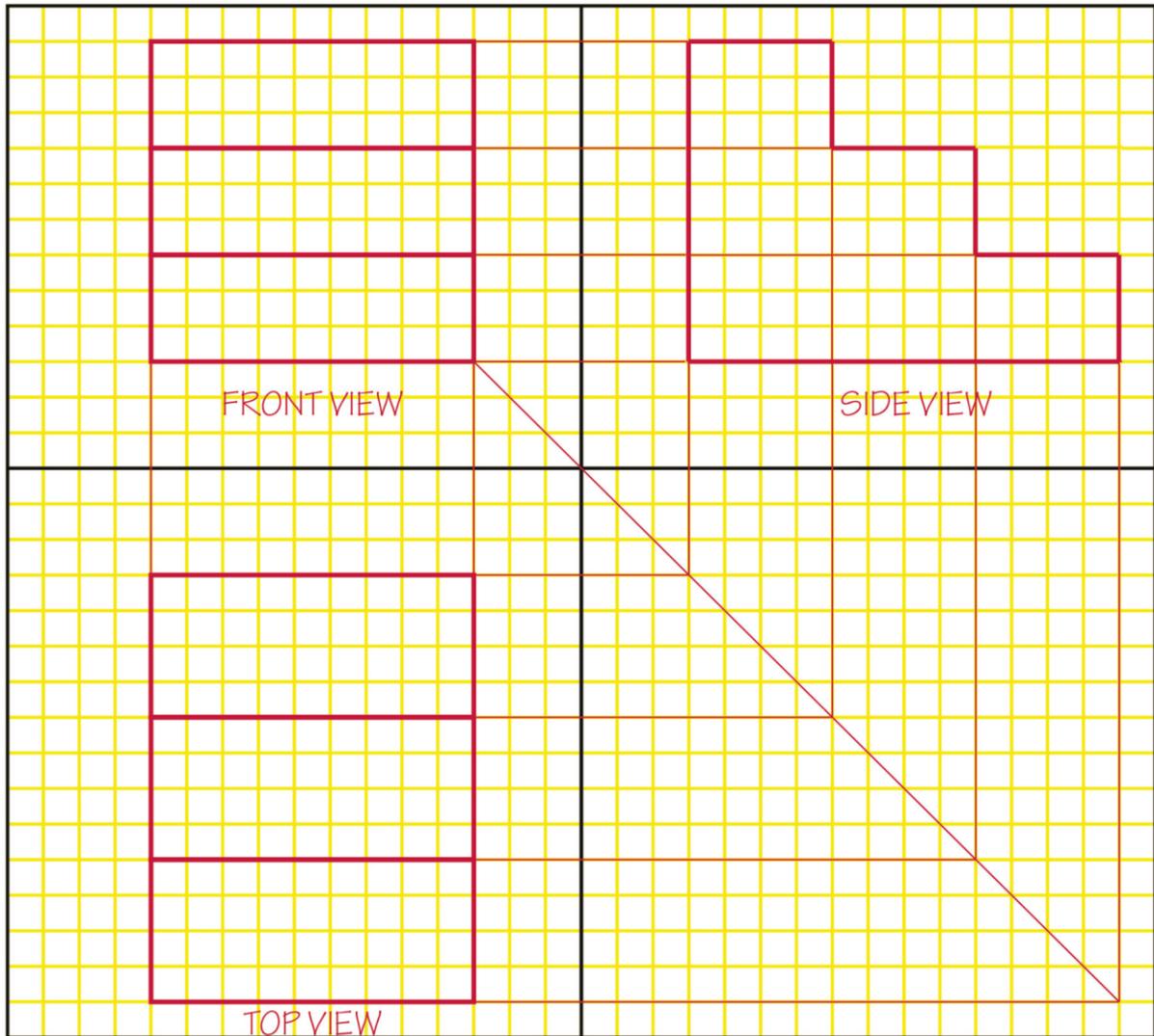
**QUESTION 2.1**

2.1.1	Wind	√
2.1.2	Ratchet and pawl	√
2.1.3	Conductors	√
2.1.4	Transistors	√
2.1.5	Pulley	√

(5)

**[20]**

**QUESTION 2.2**



Criteria	Mark allocation
Views correctly placed according to first angle orthographic projection	3
Views are correctly drawn as represented in the isometric model	3
Correct usage of line work	2
Neatness of the drawing	2

[10]

**QUESTION 3**

3.1	By distributing the weight of the objects evenly	√√
3.2.1	Tie beam	√
3.2.2	Column/pillar	√
3.2.3	Tie	√
3.2.4	Guy	√
3.2.5	Buttress	√

(7)

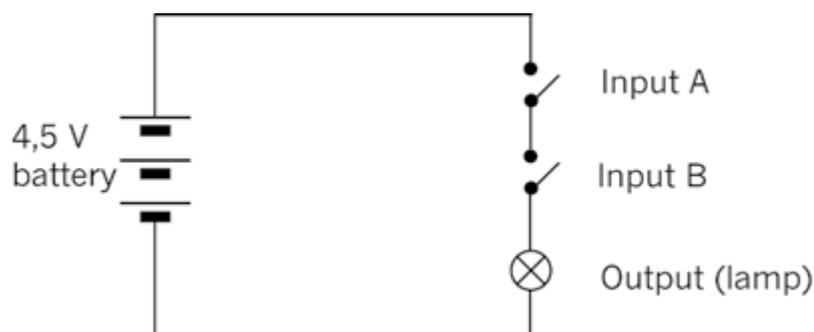
**QUESTION 4**

4.1 The current flowing through a circuit is directly proportional to the voltage acting in that circuit, and is inversely proportional to the resistance of the circuit. √√

4.2 Single Pole Double Throw. ✓✓

4.3 It reduces the current through the circuit, and reduces the voltage drop across other circuit components that are in series with the resistor. ✓✓

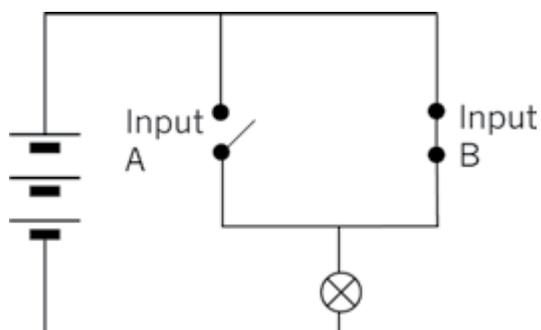
4.4.1 AND Logic ✓



**Note: A mark per component must be awarded**

(5)

4.4.2 OR Logic ✓



**Note: A mark per component must be awarded**

(5)

$$\begin{aligned}
 4.5 \quad I &= \frac{V}{R} \checkmark \\
 &= 12 \text{ V} / 3 \Omega \checkmark \\
 &= 4 \text{ A} \checkmark \checkmark
 \end{aligned}$$

**[20]****QUESTION 5.1**

5.1.1	<b>Ferrous metals</b>	✓
Examples	Cast iron, wrought iron	✓
5.1.2	<b>Non-ferrous metals</b>	✓
Examples	Copper, lead, tin, aluminium, zinc	✓

**QUESTION 5.2**

Electroplating is a process whereby a metal is coated with a thin layer of another metal by using electricity and salty water (electrolyte). ✓✓

**QUESTION 5.3**

Copper ✓ (Any other coating material)

**QUESTION 5.4**

5.4.1 The problem is that the river is 100 meters wide and during winter the river rises and it is dangerous to cross the river because of the floods and crocodiles. ✓✓

5.4.2 Safe ✓ and cost effective for the villagers. ✓

5.4.3 To stop anyone from being favoured over others ✓ and to stop corruption. ✓

5.4.4 A tender is a bid for work from a company. It gives details of how much the company would charge to complete a project. ✓✓

5.4.5 Criteria

The initial idea resembles a safe and suitable bridge	4
The initial idea resembles a bridge which is not clear	2-3
The initial idea does not resemble a safe and suitable bridge	1-2

**(19)**

**QUESTION 6**

6.1 It is increasing. ✓

This is because the big gear turns with a slower rotational speed than the small driver gear. Therefore the rotational force of the driven gear will be bigger than the rotational force of the driver gear. ✓✓

6.2 First class lever. ✓

6.3.1 Ratchet and pawl ✓✓

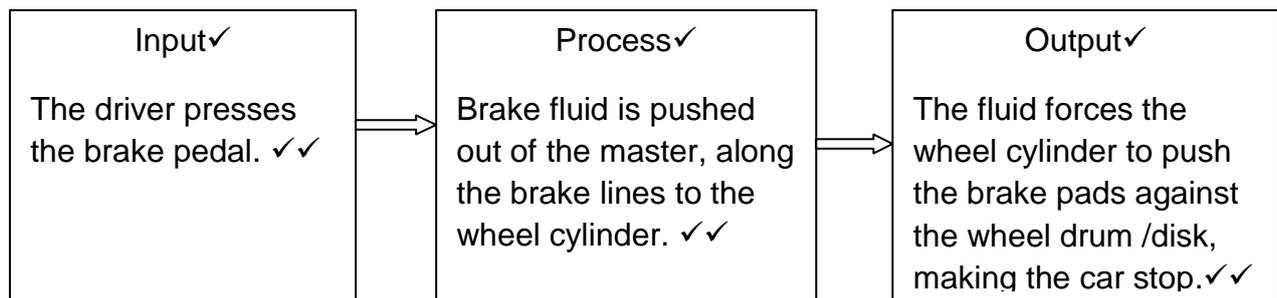
6.3.2 The ratchet and pawl allows motion in one direction while the pawl locks to prevent movement in the other direction. ✓✓ (8)

**QUESTION 7**

7.1 Force = pressure x area

$$\text{Output force} = 10 \times 0.5\text{m}^2 \checkmark\checkmark = 5\text{N}\checkmark\checkmark$$

7.2



(13)

**QUESTION 8**

8.1 On the coast✓, because there is salt air and more moisture than inland. ✓

8.2 Due to the salt water. ✓ (8)

## 8.3

<b>Metals</b>		
Corrugated iron	✓	
Galvanised iron		x
Stainless steel cutlery	✓	
Coke can		x
Mild steel	✓	

**QUESTION 9**

9.1.1.1	Strong	√
9.1.1.2	Transparent	√
9.1.1.3	Flexible	√
9.1.1.4	Water resistant	√
9.1.1.5	Pliable (or any other relevant answer).	√
9.1.2.1.	<b>Thermosetting plastic</b>	√√
Examples	Shoe soles, car tyres, electrical plugs etc.	√
9.1.2.2	<b>Thermoplastic plastic</b>	√√
Examples	Cool drink bottles, detergent bottles etc.	√
9.1.3.1	Recycled plastic saves on littering	√√
9.1.3.2	Recycling saves on the environment (or any relevant answer).	√√

(15)

**GRAND TOTAL: 120**