



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION

VHEMBE WEST DISTRICT

GRADE 09

TECHNOLOGY

2022 NOVEMBER

MEMORANDUM

MARKS: 100

This **MEMORANDUM** consists of **SEVEN (07)** pages including the cover.

SECTION A

QUESTION 1

- 1.1 B ✓ Copper and zinc
- 1.2. D ✓ Current
- 1.3 B. ✓ Varnishing
- 1.4 C. ✓ Galvanising
- 1.5 A. ✓ The collector, base and emitter
- 1.6 B. ✓ Ampere
- 1.7 A. ✓ Thermistor
- 1.8 A. ✓ Ferrous
- 1.9 B. ✓ Ohms Law
- 1.10 A. ✓ Biodegrade

[10]

QUESTION 2

2.1 The learner should list these six components:

Battery (9 V) ✓

Transistor ✓

Resistor (65Ω) ✓

Two lamps (in parallel) ✓

Buzzer ✓

Switch (open) ✓

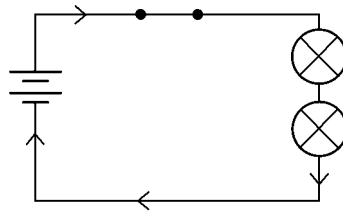
2.2 The resistor size = 65 Ω (✓). The resistor prevents the two lamps and the buzzer from being damaged by a too strong a current (✓✓).

2.3

$$\begin{aligned} I &= \frac{V}{R} \checkmark \\ &= \frac{9}{65} \checkmark \checkmark \\ &= 0.14 \text{ A} \checkmark \end{aligned}$$

2.4 The two lamps will shine ✓ and the buzzer will make a sound ✓.

2.5 The learner's circuit diagram contains two cells ✓ in series ✓, a closed switch ✓ and two lamps ✓ in series ✓.



[20]

Question 3

3.1

FOOD PRODUCTS	PRESERVING METHODS				
	Freezing	Freezing	Freezing	Freezing	Freezing
Beef	x	x	x		x
Peaches		x	x		
Beans		x	x		
Tomatoes		x	x		
Fish	x	x	x	x	x

Learners choose any TWO preserving techniques for each food product

(10)

3.2

3.2.1 True ✓

3.2.2 False ✓

3.2.3 False ✓

3.2.4 False ✓

3.2.5 True ✓

(5)

3.3

3.3.1 B ✓ A heat treatment that kills most bacteria

3.3.2 E ✓ During this process, all moisture is removed from the food

3.3.3 A ✓ Allows food to be stored for longer periods

3.3.4 C ✓ Heating foods in airtight, vacuum-sealed containers

3.3.5 D ✓ A process where food is heated to very high temperatures. It sterilises the product completely

(5)

[20]

SECTION A TOTAL = 50

SECTION B

QUESTION 4

4.1

4.1.1 Drying, pickling, fermenting, salting, heating, freezing. ✓✓✓

(Any 3 of the listed methods.)

4.1.2 Food preservation enabled groups of people to live in one place and form a community. ✓

Humans no longer had to consume hunted animals or harvest immediately, they could preserve some of their food to eat at a later time. ✓

4.2 Exposure to moisture ✓ and oxygen ✓

OR

Exposure to air ✓ and water ✓

4.3 A Electroplating ✓

B Painting ✓

C Varnishing ✓

D Galvanising ✓

[11]

QUESTION 5

5.1 It keeps water and air away from the surface of the metal. ✓

Improves the appearance and lifespan of metal ✓

Resistance to corrosion ✓

(Any TWO of the above or any other acceptable answers)

5.2 The metal underneath will corrode (rust) ✓

5.3 • Steel parts of cars or trucks ✓

• Electrical connectors ✓

• Steel bolts ✓

• Steel or aluminium parts in light fittings ✓

• Jewellery ✓

(Any THREE of the above or any other acceptable answers)

5.4 • Chrome plating ✓

• Silver plating ✓

- Gold plating✓
- Copper plating✓
- Nickel plating✓
- Zinc plating✓

(Any FOUR of the above or any other acceptable answers)

[10]

QUESTION 6

6.1 The learner's answer should contain the following information:

Type of plastic	Explanation
Thermoplastic ✓	A type of plastic that becomes soft when heated and hardens when cooled. ✓
Thermosetting plastic ✓	A type of plastic that becomes permanently rigid and hard when heated. ✓

6.2 Different plastics have different properties, mixing them would also affect the expected outcomes of the recycled material. ✓

6.3 High Density Polyethylene ✓✓

6.4 Some of recycled products of HDPE are:

- Crates ✓
- Pipes ✓
- Flower pots ✓
- Buckets ✓
- Recycling bins ✓
- Dog houses ✓
- Picnic tables ✓
- Floor tiles ✓
- Motor oil, ✓ etc. (Any 1)

6.5 Society: Employment opportunities ✓ – skills development a way of making money. ✓

Environment: Less pollution/reduces the amount of waste that ends up in landfills, reduces environmentally harmful processes such as mining, power generation and water exploitation. ✓

[9]

SECTION C

QUESTION 7

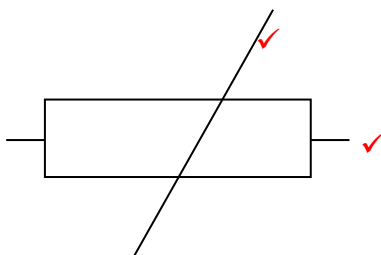
- 7.1 Brown, Grey, Yellow and Silver Stripes ✓✓
7.2 White, Grey, Red and Gold Stripes ✓✓
7.3 85 000 000 000Ω with 5% tolerance ✓✓
7.4 12 000. Ω with 10% tolerance ✓✓
7.5 FUSE is a piece of metal inside a circuit which get melted if circuit is hot and cut off the flow of electricity and prevents any further damage ✓✓
7.6 Ohms (Ω) ✓

[11]

QUESTION 8

8.1 Thermistor

8.2



(One mark for the rectangle and one mark line through the rectangle)

- 8.3 • hot water geysers, ✓
• Fire sensors, ✓
• Electric blankets, ✓
• Toasters, ✓
• Kettles, ✓
• Heaters, ✓
• Irons, ✓

(Any FOUR of the above or other acceptable appliances)

8.4 It is a special type of resistor that detects light or dark ✓ and whose resistance changes as the light intensity falling on it changes ✓.

OR

When it is light✓, the resistance of the LDR increases to a point where current does not flow. ✓

OR

When it is dark✓, the resistance decreases, the current that flows in the circuit and the light goes on✓

(Any of the above or other acceptable explanations)

[9]

SECTION C TOTAL = 20

GRAND TOTAL = 100