



Department of Education

North West Province
REPUBLIC OF SOUTH AFRICA

PROVINCIAL ASSESSMENT

GRADE 9

NATURAL SCIENCES
MARKING GUIDELINES
JUNE 2024

MARKS: 60

TIME : 90 minutes

These marking guidelines consist of 4 pages.

Grade 9-Marking guidelines

SECTION A				
QUESTION 1				
1.1	1.1.1	B✓		(1)
	1.1.2	B✓		(1)
	1.1.3	D✓		(1)
	1.1.4	C✓		(1)
	1.1.5	C✓		(1)
				[5]
1.2	1.2.1	Combustion.✓		(1)
	1.2.2	Protons.✓		(1)
	1.2.3	Balanced equation. ✓		(1)
	1.2.4	Periods.✓		(1)
	1.2.5	Metal oxide.✓		(1)
				[5]
	1.3.2	A ✓		(1)
	1.3.3	B ✓		(1)
	1.3.4	E ✓		(1)
	1.3.5	F ✓		(1)
				[5]
			TOTAL SECTION A:	15
SECTION B				
QUESTION 2				
2.1	2.1.1	$\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$ (reactants✓products✓balancing✓)		(3)
	2.1.2	$4\text{Na} + \text{O}_2 \rightarrow 2\text{Na}_2\text{O}$ (reactants✓products✓balancing✓)		(3)
				[6]
QUESTION 3				
3.1				
	3.1.1	Products. ✓		(1)
	3.1.2	Carbon dioxide. ✓ Hydrogen gas. ✓		(2)
				[3]
4.1	4.1.1	Corrosion		(1)
	4.1.2	Rust		(1)
4.1.3	Three ways used to prevent rusting: - Iron and steel can be painted.✓ - Iron and steel can be coated with a metal that do not rust.✓ - Electroplating by using chromium or zinc. ✓ - Water repellent oil can be used to protect machines. - Grease can be used. (Any 3)			(3)
4.1.4	$4\text{Fe}✓ + 3\text{O}_2✓ \rightarrow 2\text{Fe}_2\text{O}_3✓✓$			(4)
				[9]

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QUESTION 5			
5.1	5.1.1	A non-metal oxide is formed .✓ ✓	(2)
	5.1.2	Coal/ charcoal. ✓	(1)
	5.1.3	Carbon dioxide.✓	(1)
	5.1.4	CO ₂ . ✓	(1)
	5.1.5	Bubble the gas through clear lime water. ✓ If the lime water turns milky, ✓ it indicates that it is carbon dioxide.	(2)
	5.1.6	Global warming. ✓✓	(2)
			[9]
QUESTION 6			
6.1	6.1.1	The pH of sodium hydroxide increases when dilute hydrogen chloride is added to it, until the end point is reached. ✓✓ OR The pH of sodium hydroxide decreases when dilute hydrogen chloride is added to it, until the end point is reached. (Any relevant answer)	(2)
	6.1.2	pH. ✓	(1)
	6.1.3	Volume of hydrochloric acid .✓	(1)
	6.1.4	13. ✓	(1)
	6.1.5	pH = 7. ✓	(1)
6.2	6.2.1	Three uses of neutralisation reactions: - Soil treatment. ✓ - Indigestion. ✓ - Insect stings. ✓ - Waste from industries. ✓ (Any 3)	(3)
6.3	6.3.1	NaCl. ✓	(1)
	6.3.2	MgSO ₄ . ✓	(1)
			[11]
QUESTION 7			
7.1	7.1.1	Sulphur dioxide (SO ₂); Nitrogen dioxide(NO ₂); Carbon dioxide(SO ₂). ✓ (Any one)	(1)
	7.1.2	Two sources of these gases: -Electricity generated in fossil fuels power stations. ✓ -Factories emitting smoke.✓ -Exhaust fumes from motor vehicles. -Natural disaster such as volcanoes. (any relevant answer)	(2)

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	7.1.3	-Acid rain destroys trees and plants. ✓✓ -It damages buildings. -It makes lakes and rivers more acidic. -It destroys aquatic life. -It corrodes cars, airplanes and steel bridges. (Any one)	(2)
	7.1.4	-Coal power stations can use filters in their smoke towers to reduce/remove sulphur gases before the smoke is released into the atmosphere. ✓✓ -The use of renewable energy sources will reduce reliance on coal and other fossil fuels, and this will reduce the emission of acid producing gases in the atmosphere. (Any relevant answer)	(2)
			[7]
		TOTAL SECTION C :	45
		GRAND TOTAL:	60