AREAS TO BE EMPHASISED FOR
END OF CYCLE ASSESSMENT IN CHEMISTRY

1. THE LEARNER APPRECIATES CONTRIBUTION OF CHEMISTRY TO OUR ECONOMY

ASSESSABLE AREAS

(a) Manufacture of oxygen gas *(b) Manufacture of chlorine gas* *(c) Extraction of metals(Na, Al, Fe, Cu, Zn)* *(d) Manufacture of fertilizers* *(e) Manufacture of detergents*	*(f) Manufacture of sodium hydroxide* *(g) Manufacture of sulphuric acid* *(h) Manufacture of cement* *(i) Manufacture of Ethanol* *(j) Manufacture of bio gas*	*Process involves* ***V – vessel*** ***Cp – chemical processes*** ***Cd – conversion to desired product*** ***Ch – coherence*** ***Pr -purification***

BASIS OF ASSESSMENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE
A	Raw materials Rm	All raw material	02
		any one raw material	01
		no raw material	00
B	Process of production Pp	Process of production with all V, Cp, Ch, Pr	03
		Process of production with any three of V, Cp, Ch, Pr	02
		Process of production with any one of V, Cp, Ch, Pr	01
		No process of production	00
C	Side effects of the process of production and mitigation Se	Any one danger identified, explained and mitigated	03
		Any one danger identified and explained OR identified and mitigated OR explained and mitigated	02
		Any one danger identified OR explained OR mitigated	01
		No danger identified, explained or mitigated	00
D	Social benefits Sb	Any one social benefit identified, effect of the benefit and impact of the benefit	03
		Any one social benefit identified and effect of the benefit OR identified and impact of the benefit OR effect of the benefit and impact of the benefit	02
		Any one social benefit identified OR effect of the benefit OR impact of the benefit	01
		No social benefit identified	00

2. THE LEARNER APPRECIATES THE APPLICATION OF CHEMISTRY IN DAILY LIFE.

ASSESSABLE AREAS

FOOD ADDITIVES		DRUGS AND MEDICINE	NUCLEAR PROCESSES	DETERGENTS
Flavour enhances Preservatives Glazing agents Gelling agents Glazing agents Anti-oxidants Bulking agents	Beverages Dyes(food colours) Stabilizers Thickeners Biological enzymes Whitening agents Firming agents	Antibiotics (penicillin & streptrine) Herbal medicine (Trachtroul medicine) Analgesics (aspirin, paracetamol codeine)	Nuclear fission Nuclear fusion Nuclear decay and half life	Soapy detergents Soapless detergent

BASIS OF ASSESSMENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE
A	Category/type of product	Any one product and category/type of product identified	02
		Any one product or category/type of product identified	01
		no product nor category/type of product identified	00
B	Function(s) of product(s)	Anyone function of product(s)	01
		No function of the product(s)	00
C	Dangers or Side effects of the product and mitigation	Any one danger/side effect identified explained and mitigated	03
		Any one danger/side effect identified explained and mitigated	02
		Any one danger/side effect identified and explained OR explained and mitigated	01
		No danger/side effect identified OR mitigated	00
D	Evaluation of products/processes	Evaluation of products/processes basing on both similarities and differences	02
		Evaluation of products/processes basing on either similarities OR differences	01
		No evaluation of products/processes	00

3. THE LEARNER APPRECIATES DIVERSITY AND INTERACTIONS OF SUBSTANCES AND THEIR IMPORTANCE IN LIFE.

ASSESSABLE AREAS

(a) Elements, compounds and mixtures (b) The periodic table (c) Trends in the periodic table (d) Reactivity series	(e) Structure and bonds (f) The mole concept (g) Materials other than plastics (h) Polymers and Plastics

BASIS OF ASSESSMENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE
A	Category of element, compound, substance or material with a reason	Identified category of element, compound, substance or material with a reason and example	03
		Identified category of element, compound, substance or material with either example OR reason	02
		Identified category of element, compound, substance OR material OR reason only OR example only	01
		No identified category of element, compound, substance OR material OR reason OR example	00
B	Properties or prediction of properties of element, compound, substance OR material	At least four properties or characteristics or predictions of trends	03
		At least two properties or characteristics or predictions of trends	02
		Any one property or characteristic or prediction of trends	01
		No property or characteristic or prediction of trends	00
C	Uses of element, compound, substance or material/applications/ quantity of matter i.e moles	Any one use/application	01
		No use/ application	00
D	Impact/ pollution of environment by element, compound, substance or material and mitigation	Identified impact and mitigation	02
		Identified impact OR mitigation	01
		No Identified impact OR mitigation	00

4. THE LEARNER APPRECIATES THE EXISTENCE OF NATURAL RESOURCES IN THE ENVIRONMENT AND THEIR IMPORTANCE IN EVERYDAY LIFE

ASSESSABLE AREAS

(a) Air (b) Water (c) Rocks and mineral resources	(d) Carbon based fuels (e) Fossil fuels

BASIS OF ASSESSMENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE
A	Identity of category of natural resource, reason and example	Identified category of natural resource with a reason and example	03
		Identified category of natural resource with a reason OR Identified category of natural resource with example	02
		Identified category of natural resource OR example	01
		No identified category of natural resource	00
B	Composition of natural resource	Any two components of natural resource	02
		Any one component of natural resource	01
		No component of natural resource	00
C	Impact of the natural resource on the environment, how it occurs, and mitigation	Anyone Impact of the natural resource on the environment, how it occurs, and its mitigation	03
		Anyone Impact of the natural resource on the environment and how it occurs OR Anyone Impact of the natural resource on the environment, and its mitigation	02
		Anyone Impact of the natural resource on the environment OR how it occurs OR its mitigation	01
		No Impact of the natural resource on the environment, how it occurs, and its mitigation	00
D	Benefit/importance of natural resource	Any one benefit/importance of natural resource	01
		No benefit/importance of natural resource	00

5. THE LEARNER UNDERSTANDS THAT CHEMISTRY IS A PROCESS OF EVIDENCE-BASED ENQUIRY INVOLVING THE COLLECTION OF EVIDENCE AND THE DEVELOPMENT OF THEORIES THAT HELP US EXPLAIN THE EVIDENCE

(SCIENCE PROCESS SKILLS)

BASIS OF ASSESSMENT

Basis of assessment	Assessment criteria	Scoring
Aim of the experiment	• Aim of experiment with both key words • Aim of experiment with one key word • No aim of the experiment	02 01 00
Variable for the experiment	• Independent, dependent and controlled • Independent and dependent or independent and controlled or dependent and controlled variable • Independent or dependent or controlled variable • No variable	03 02 01 00
Hypothesis	• Hypothesis related to experiment with both key words • Hypothesis related to experiment with one of key words • No / wrong hypothesis of the experiment	02 01 00
Procedure of the experiment	• Relevant material, relevant procedure, coherent procedure of the experiment • Relevant materials and procedure • Either relevant material or relevant procedure • No relevant material and procedure	03 02 01 00
Risks and mitigations	• Any one risk identified and mitigated • Any one risk identified or mitigated • No risk identified or mitigated	02 01 00
Presentation of data	• 2/3 of required sets of data appropriately presented • 1/3 of required sets of data appropriately presented • Data appropriately presented without required sets • Data partially appropriately presented without required sets • No set of data presented	04 03 02 01 00
Recording of data	• Appropriate recording of data within the error margin • Partial appropriate recording of data within the error margin • Appropriate recording of data outside the error margin • Partial appropriate recording of data outside error margin • No data recorded/ data recorded outside error margin	04 03 02 01 00
Data analysis and interpretation	Method used is: • Appropriate and accurate • Appropriate and partially accurate • Appropriate and inaccurate • Inappropriate and inaccurate	03 02 01 00
Conclusion	Conclusion based on data interpretation No conclusion based on data interpretation	01 00

PRACTICAL ASSESSABLE AREAS

• Chemical reaction rates • Energy changes during chemical reactions • Formulae, stoichiometry and mole concept	• The reactivity series • Solubility of Salts • Soapy detergents and hardwater