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ಕರ್ನಾಟಕ ಪ್ರೌಢ ಶಿಕ್ಷಣ ಪರೀಕ್ಷಾ ಮಂಡಳಿ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು – 560 003

KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD, MALLESHWARAM, BANGALORE – 560 003

ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಪರೀಕ್ಷೆ, ಮಾರ್ಚ್ / ಏಪ್ರಿಲ್ — 2022

S. S. L. C. EXAMINATION, MARCH/APRIL, 2022

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 11. 04. 2022] ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Chem.)**

Date : 11. 04. 2022] **CODE NO. : 83-E (Chem.)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತ ವಿಜ್ಞಾನ, ರಸಾಯನ ವಿಜ್ಞಾನ ಮತ್ತು ಜೀವ ವಿಜ್ಞಾನ / **Physics, Chemistry & Biology**)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ & ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Fresh & Regular Repeater)

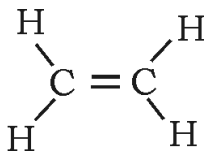
(ರಸಾಯನಶಾಸ್ತ್ರ / **Chemistry**)

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / English Medium)

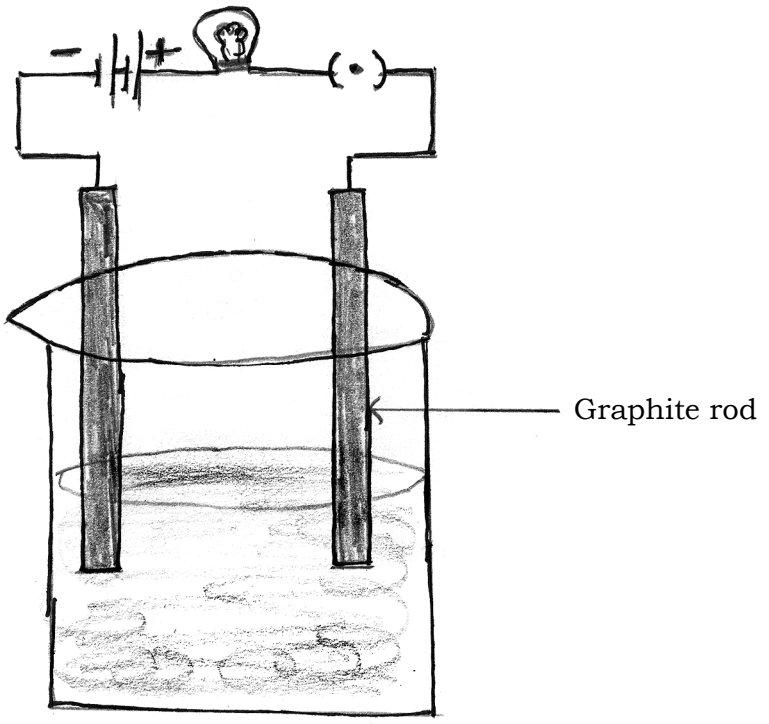
[ಗರಿಷ್ಠ ಅಂಕಗಳು : **80**

[Max. Marks : 80

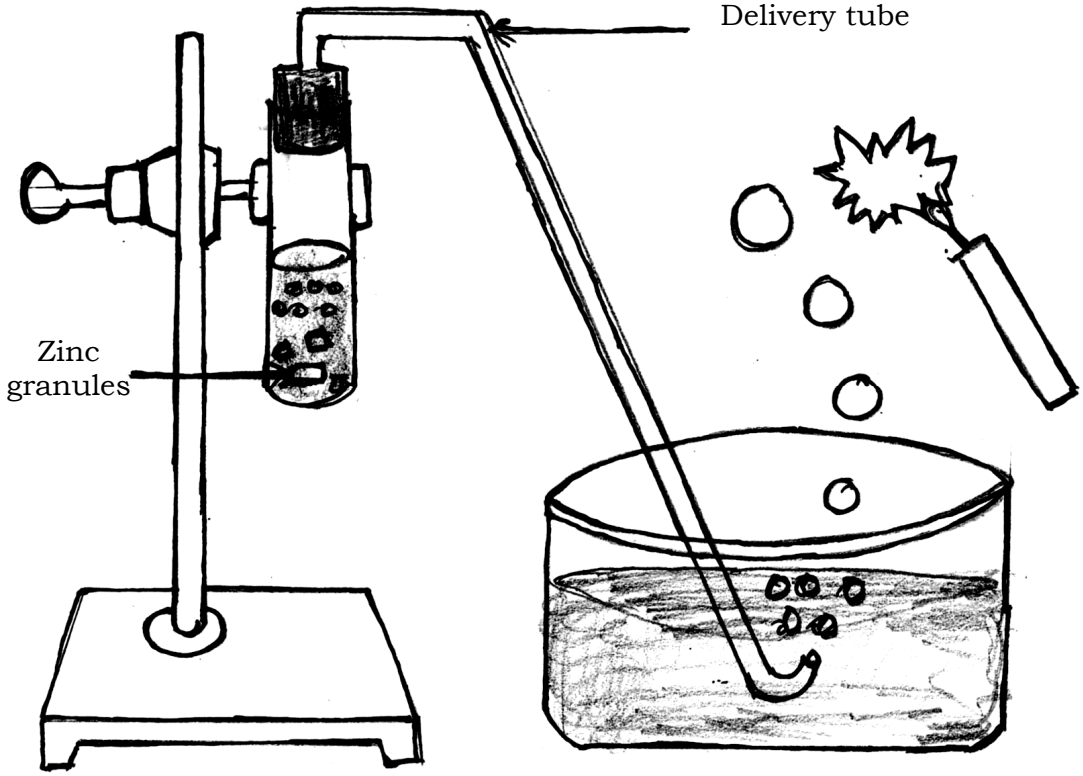
Qn. Nos.	Value Points	Total
	PART - B	
	(CHEMISTRY)	
VII.	Multiple Choice : $2 \times 1 = 2$	
14.	The gas liberated at the cathode in the electrolysis of water is	
	(A) Oxygen (B) Hydrogen	
	(C) Chlorine (D) Nitrogen.	
	Ans. :	
	(B) Hydrogen	1

Qn. Nos.	Value Points	Total
15.	Atomic number of chlorine is 17. The period number of this element in modern periodic table is (A) 2 (B) 7 (C) 4 (D) 3. *Ans.* : (D) 3	1
VIII.	Answer the following questions : $4 \times 1 = 4$	
16.	State modern periodic law. *Ans.* : "Properties of elements are periodic functions of their atomic numbers."	1
17.	Write any two uses of Plaster of Paris. *Ans.* : *Plaster of Paris is used in :* ★ Supporting fractured bones ★ Making toys ★ Decorative materials ★ Making smooth surfaces. (Any *two*) $\frac{1}{2}+\frac{1}{2}$	1
18.	Write the structural formula of ethene molecule. *Ans.* : 	1

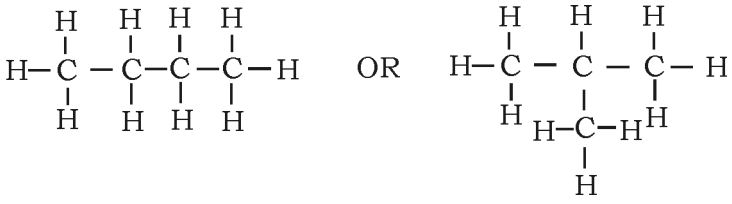
Qn. Nos.	Value Points	Total
19.	$ZnO + C \rightarrow Zn + CO$ In this reaction name the reactant i) that is oxidised and ii) that is reduced. *Ans.* : ★ Oxidised reactant is : C $\frac{1}{2}$ ★ Reduced reactant is : ZnO. $\frac{1}{2}$	1
IX.	Answer the following questions : $3 \times 2 = 6$	
20.	The pH values of *A, B* and *C* solutions are 5, 6 and 7 respectively. Which of these solutions is more acidic in nature ? Why ? *Ans.* : ★ Solution *A* is more acidic. 1 ★ As it has more H^+ ions. 1	2
21.	Draw the diagram to show the arrangement of the apparatus used for testing the conductivity of salt solution and label 'graphite rod'.	

Qn. Nos.	Value Points	Total
	Ans. : Testing the conductivity of a salt solution :  Diagram — $1\frac{1}{2}$ Labelling — $\frac{1}{2}$	2
22.	Give reason : a) Metals are used in making cooking vessels. b) Sodium metal is stored in kerosene. OR Give reason : a) When a calcium metal reacts with water, the liberated hydrogen gas does not catch fire.	

Qn. Nos.	Value Points	Total
	b) Ionic compounds have high melting and boiling points. *Ans.* : a) Because, metals are good conductors of heat / having high melting points / property of malleability. (Any *one*) 1 b) Sodium metal vigorously reacts with atmospheric oxygen and water, but not with kerosene. 1	2
	OR a) The reaction of calcium with water is less violent. The heat evolved is not sufficient for the hydrogen to catch fire. 1 b) Because a considerable amount of energy is required to break the strong inter-ionic attraction. 1	2
X.	Answer the following questions : $3 \times 3 = 9$	
23.	What is atomic size ? In the modern periodic table the atomic size decreases along a 'period' and increases down the 'group'. Why ? Explain. *Ans.* : ★ The distance between the centre of the nucleus and the outermost shell of an isolated atom. 1 In modern periodic table atomic size decreases along the period because : ★ Electrons are being added to the outermost shell of an atom that tends to pull the electrons closer to the nucleus / No new shells are added to atom. 1 Atomic size increases down the group because : ★ New shells are being added, this increases the distance between the outer most electrons and the nucleus. 1	3

Qn. Nos.	Value Points	Total
24.	Draw the diagram of arrangement of the apparatus to show the reaction of zinc granules with dilute sulphuric acid and testing hydrogen gas by burning. Label the following parts : i) Zinc granules ii) Delivery tube. *Ans.* : Reaction of zinc granules with dilute sulphuric acid :  Diagram — 2 Labeling — $\frac{1}{2}+\frac{1}{2}$	3
25.	Write the balanced chemical equation for the following chemical reactions : i) Calcium carbonate $\xrightarrow{\text{Heat}}$ Calcium oxide + Carbon dioxide ii) Hydrogen + Chlorine $\longrightarrow$ Hydrogen chloride	

Qn. Nos.	Value Points	Total
	iii) Magnesium + Hydrochloric acid $\longrightarrow$ Magnesium chloride + Hydrogen.	
	OR	
	Which type of chemical reaction takes place when an iron nail is dipped in copper sulphate solution ? Why ? Write a balanced chemical equation for this chemical reaction.	
	Ans. :	
	i) $CaCO_3 \xrightarrow{Heat} CaO + CO_2$ 1	
	ii) $H_2 + Cl_2 \longrightarrow 2HCl$ 1	
	iii) $Mg + 2HCl \longrightarrow MgCl_2 + H_2$. 1	3
	OR	
	★ Chemical displacement reaction. 1	
	★ Because more reactive iron displaces copper from copper sulphate solution. 1	
	★ $Fe + CuSO_4 \longrightarrow FeSO_4 + Cu$. 1	3
XI.	Answer the following question : $1 \times 4 = 4$	
26.	a) What are structural isomers ? Write the molecular and structural formula of butane.	
	b) What is catenation ? Write general formula for alkenes.	
	Ans. :	
	a)	
	★ Carbon compounds having same molecular formula but different structural formulae 1	
	★ Molecular formula of butane is C_4H_{10} $\frac{1}{2}$	

Qn. Nos.	Value Points	Total
	★ Structural formula of butane is  OR $\frac{1}{2}$	
	b)	
	★ Carbon has unique ability to form bonds with other atoms of carbon, giving rise to large molecules. 1	
	★ General formula for alkene is $C_n H_{2n}$ 1	4