

**CCE PF
CCE PR
NSR & NSPR**

C

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**)

(ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ & ಪುನರಾವರ್ತಿತ ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / ಎನ್.ಎಸ್.ಆರ್. & ಎನ್.ಎಸ್.ಪಿ.ಆರ್.)

(**Private Fresh & Private Repeater / NSR & NSPR**)

(ರಸಾಯನಶಾಸ್ತ್ರ / **Chemistry**)

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / **English Medium**)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : **100**

[**Max. Marks : 100**

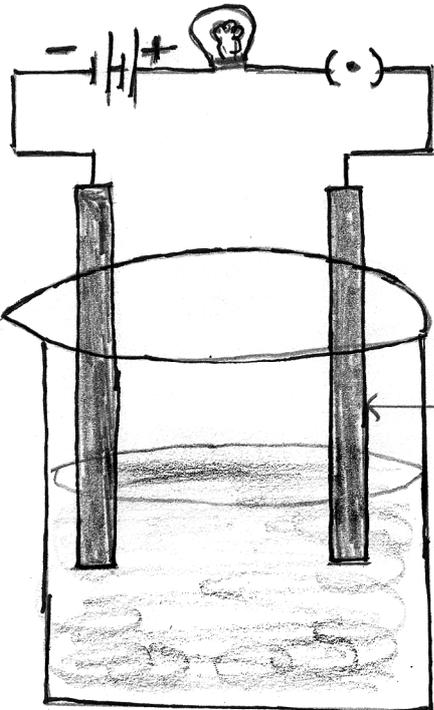
Qn. Nos.	Value Points	Total
PART - B (CHEMISTRY)		
VII.	Multiple Choice :	$2 \times 1 = 2$
17.	The gas liberated at the cathode in the electrolysis of water is (A) Oxygen (B) Hydrogen (C) Chlorine (D) Nitrogen. Ans. : (B) Hydrogen	1

PF/PR/NSR & NSPR-(C)-(700)-21038 (MA)-CHEM

[Turn over

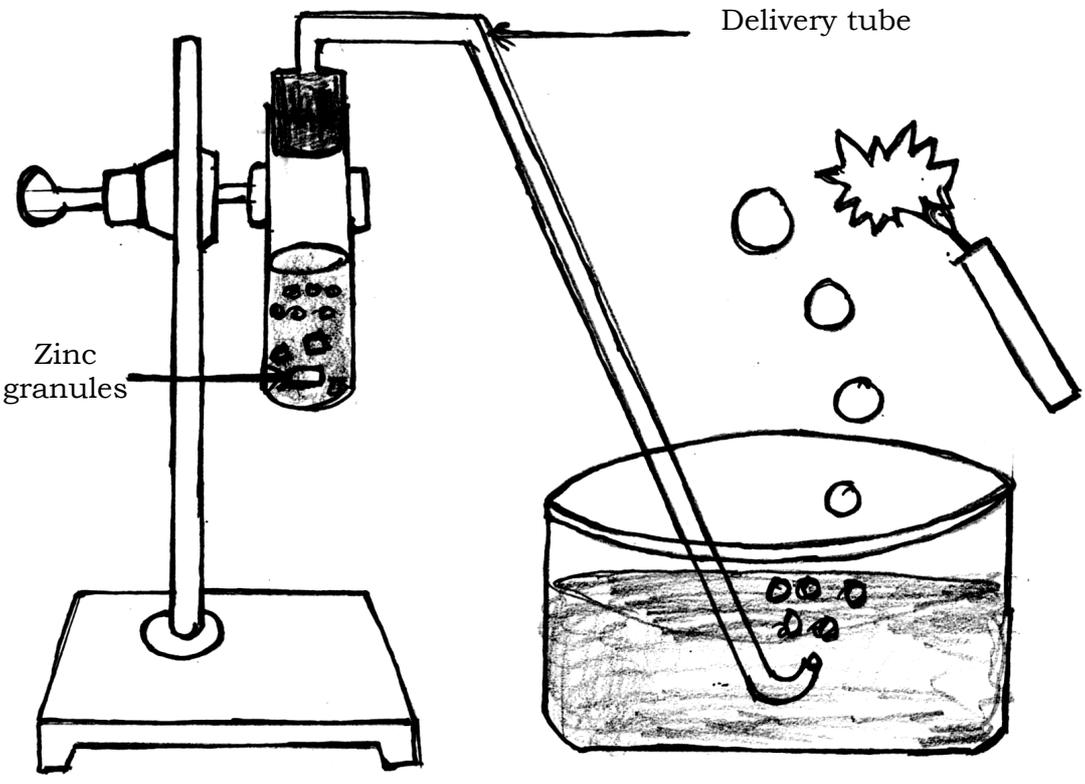
Qn. Nos.	Value Points	Total
18.	Atomic number of chlorine is 17. The period number of this element in modern periodic table is (A) 2 (B) 7 (C) 4 (D) 3. <i>Ans. :</i> (D) 3	1
VIII.	Answer the following questions : $4 \times 1 = 4$	
19.	State modern periodic law. <i>Ans. :</i> "Properties of elements are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

Qn. Nos.	Value Points	Total
22.	<p>$\text{ZnO} + \text{C} \rightarrow \text{Zn} + \text{CO}$</p> <p>In this reaction name the reactant</p> <p>i) that is oxidised and</p> <p>ii) that is reduced.</p> <p><i>Ans. :</i></p> <p>★ Oxidised reactant is : C $\frac{1}{2}$</p> <p>★ Reduced reactant is : ZnO. $\frac{1}{2}$</p>	1
IX.	<p>Answer the following questions : $6 \times 2 = 12$</p>	
23.	<p>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 ?</p> <p><i>Ans. :</i></p> <p>★ Solution A is more acidic. 1</p> <p>★ As it has more H^+ ions. 1</p>	2
24.	<p>Draw the diagram to show the arrangement of the apparatus used for testing the conductivity of salt solution and label 'graphite rod'.</p> <p><i>Ans. :</i></p>	

Qn. Nos.	Value Points	Total
	<p>Testing the conductivity of a salt solution :</p>  <p style="text-align: right;">Diagram — $1\frac{1}{2}$ Labelling — $\frac{1}{2}$</p>	2
25.	<p>Give reason :</p> <p>a) Metals are used in making cooking vessels. b) Sodium metal is stored in kerosene.</p> <p style="text-align: center;">OR</p> <p>Give reason :</p> <p>a) When a calcium metal reacts with water, the liberated hydrogen gas does not catch fire. b) Ionic compounds have high melting and boiling points.</p> <p>Ans. :</p> <p>a) Because, metals are good conductors of heat / having high melting points / property of malleability. (Any one) 1</p>	

Qn. Nos.	Value Points	Total	
	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
26.	What is rancidity ? How can it be prevented ? <i>Ans. :</i> <i>Rancidity :</i> ★ Change in the taste and smell of food materials containing fat and oils due to oxidation.	1	
	The methods to prevent rancidity : ★ By adding substances which prevent oxidation (anti-oxidants) ★ Keeping food in air tight containers ★ By flushing nitrogen like gases in bags of chips. (Any two)	$\frac{1}{2} + \frac{1}{2}$	2
27.	Mention the precautionary measures to be taken while diluting concentrated acid. <i>Ans. :</i> ★ Acid has to be added to water, but not water to acid ★ The acid must always be added slowly to water. ★ Continuous stirring is to be done while adding acid to water. (Any two)	1 + 1	2
28.	Write the functional group present in butanol and propanone. Mention number of carbon atoms in a molecule of these compounds.		

Qn. Nos.	Value Points	Total
	<p>Ans. :</p> <ul style="list-style-type: none"> ★ Functional group in butanol is — OH Alcohol 1/2 ★ Functional group in propanone is $\begin{array}{c} - C - \\ \\ O \end{array}$ Ketone 1/2 ★ Number of carbon atoms in butanol is 4 1/2 ★ Number of carbon atoms in propanone is 3 1/2 	2
X.	Answer the following questions : 3 × 3 = 9	
29.	<p>What is atomic size ? In the modern periodic table the atomic size decreases along a 'period' and increases down the 'group'. Why ? Explain.</p> <p>Ans. :</p> <ul style="list-style-type: none"> ★ The distance between the centre of the nucleus and the outermost shell of an isolated atom. 1 <p>In modern periodic table atomic size decreases along the period because :</p> <ul style="list-style-type: none"> ★ 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 <p>Atomic size increases down the group because :</p> <ul style="list-style-type: none"> ★ New shells are being added, this increases the distance between the outer most electrons and the nucleus. 1 	3
30.	<p>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 :</p> <ul style="list-style-type: none"> i) Zinc granules ii) Delivery tube. 	

Qn. Nos.	Value Points	Total
	<p>Ans. :</p> <p>Reaction of zinc granules with dilute sulphuric acid :</p>  <p style="text-align: right;">Diagram — 2 Labeling — $\frac{1}{2} + \frac{1}{2}$</p>	3
31.	<p>Write the balanced chemical equation for the following chemical reactions :</p> <p>i) Calcium carbonate $\xrightarrow{\text{Heat}}$ Calcium oxide + Carbon dioxide</p> <p>ii) Hydrogen + Chlorine \longrightarrow Hydrogen chloride</p> <p>iii) Magnesium + Hydrochloric acid \longrightarrow Magnesium chloride + Hydrogen.</p> <p style="text-align: center;">OR</p> <p>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.</p>	

Qn. Nos.	Value Points	Total
	<p>Ans. :</p> <p>i) $\text{CaCO}_3 \xrightarrow{\text{Heat}} \text{CaO} + \text{CO}_2$</p> <p>ii) $\text{H}_2 + \text{Cl}_2 \longrightarrow 2\text{HCl}$</p> <p>iii) $\text{Mg} + 2\text{HCl} \longrightarrow \text{MgCl}_2 + \text{H}_2$.</p> <p style="text-align: center;">OR</p> <p>★ Chemical displacement reaction.</p> <p>★ Because more reactive iron displaces copper from copper sulphate solution.</p> <p>★ $\text{Fe} + \text{CuSO}_4 \longrightarrow \text{FeSO}_4 + \text{Cu}$.</p>	<p>1</p> <p>1</p> <p>1</p> <p>3</p> <p>1</p> <p>1</p> <p>1</p> <p>3</p>
XI.	Answer the following question :	$1 \times 4 = 4$
32.	<p>a) What are structural isomers ? Write the molecular and structural formula of butane.</p> <p>b) What is catenation ? Write general formula for alkenes.</p>	
	<p>Ans. :</p> <p>a)</p> <p>★ Carbon compounds having same molecular formula but different structural formulae</p> <p>★ Molecular formula of butane is C_4H_{10}</p> <p>★ Structural formula of butane is</p> <div style="display: flex; justify-content: center; align-items: center;"> <div style="text-align: center;"> $\begin{array}{cccc} \text{H} & \text{H} & \text{H} & \text{H} \\ & & & \\ \text{H}-\text{C} & -\text{C} & -\text{C} & -\text{C}-\text{H} \\ & & & \\ \text{H} & \text{H} & \text{H} & \text{H} \end{array}$ </div> <div style="margin: 0 20px;">OR</div> <div style="text-align: center;"> $\begin{array}{ccc} \text{H} & \text{H} & \text{H} \\ & & \\ \text{H}-\text{C} & -\text{C} & -\text{C}-\text{H} \\ & & \\ \text{H} & \text{H}-\text{C}-\text{H} & \text{H} \\ & & \\ & \text{H} & \end{array}$ </div> </div>	<p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>
	<p>b)</p> <p>★ Carbon has unique ability to form bonds with other atoms of carbon, giving rise to large molecules.</p> <p>★ General formula for alkene is C_nH_{2n}</p>	<p>1</p> <p>1</p> <p>4</p>