

**CCE PF  
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REVISED**

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

**KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD, MALLESWARAM,  
BANGALORE – 560 003**

ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಪರೀಕ್ಷೆ, ಮಾರ್ಚ್ / ಏಪ್ರಿಲ್ — 2020

**S. S. L. C. EXAMINATION, MARCH/APRIL, 2020**

ಮಾದರಿ ಉತ್ತರಗಳು

**MODEL ANSWERS**

ದಿನಾಂಕ : 30. 03. 2020 ]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Chem.)**

Date : 30. 03. 2020 ]

CODE NO. : **83-E (Chem.)**

ವಿಷಯ : ವಿಜ್ಞಾನ

**Subject : SCIENCE**

( ರಸಾಯನಶಾಸ್ತ್ರ / Chemistry )

( ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus )

( ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ & ಪುನರಾವರ್ತಿತ ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / Private Fresh & Private Repeater )

( ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version )

[ ಗರಿಷ್ಠ ಅಂಕಗಳು : 100

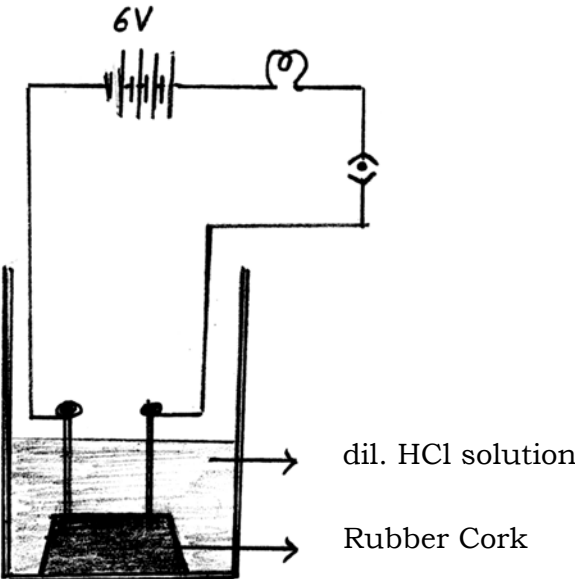
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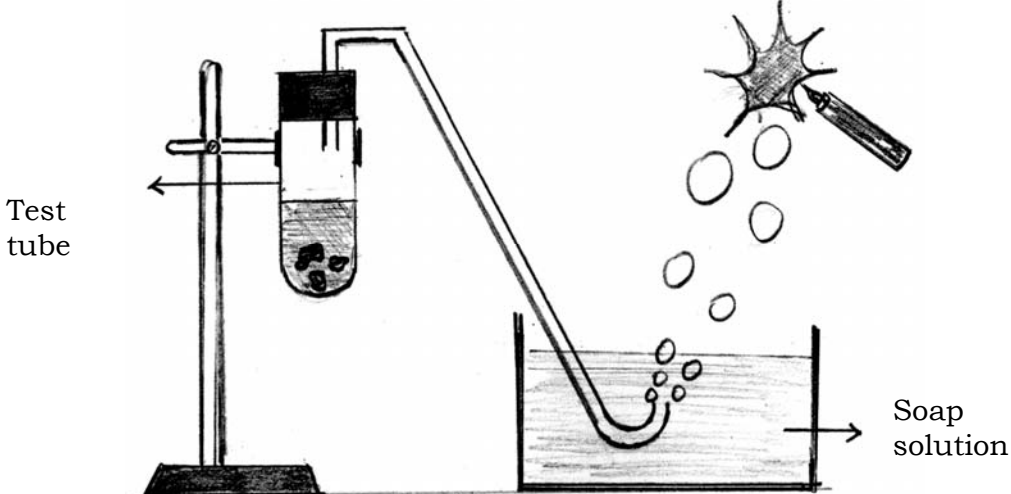
Qn. Nos.	Value Points	Total
2.	As the pH value of a neutral solution increases (A) basic property decreases and number of OH <sup>-</sup> ions increases (B) acidic property increases and number of H <sup>+</sup> ions decreases (C) basic property increases and number of OH <sup>-</sup> ions increases (D) acidic property decreases and number of H <sup>+</sup> ions increases. Ans. : (C) basic property increases and number of OH <sup>-</sup> ions increases	1
6.	An example for saturated hydrocarbon is (A) C <sub>2</sub> H <sub>6</sub> (B) C <sub>3</sub> H <sub>4</sub> (C) C <sub>2</sub> H <sub>2</sub> (D) C <sub>2</sub> H <sub>4</sub> . Ans. : (A) C <sub>2</sub> H <sub>6</sub>	1

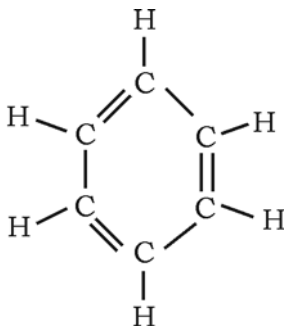
**PF & PR(C)-2006 (CHE)**

[ Turn over

Qn. Nos.	Value Points	Total
8.	<p>The molecular formula of three carbon compounds which are in homologous series are <math>C_2H_6</math>, <math>C_3H_8</math>, <math>C_4H_{10}</math>. The suitable general formula for these compounds is</p> <p>(A) <math>C_n H_{2n}</math> (B) <math>C_n H_{2n-1}</math>            (C) <math>C_n H_{2n-2}</math> (D) <math>C_n H_{2n+2}</math>.</p> <p>Ans. :            (D) <math>C_n H_{2n+2}</math>.</p>	1
9.	<p>An iron ring is to be coated with copper. How can we do this without using electricity ?</p> <p>Ans. :</p> <p>★ Iron ring should be dipped in copper sulphate solution. Iron displaces copper from copper sulphate solution and copper is coated on iron ring.</p>	$\frac{1}{2} + \frac{1}{2}$ 1
12.	<p>Sodium and potassium are placed in the same group of modern periodic table. If the molecular formula of sodium sulphate is <math>Na_2SO_4</math>, then decide the molecular formula of potassium sulphate. Give reason for your answer.</p> <p>Ans. :</p> <p>★ Molecular formula of potassium sulphate is <math>K_2SO_4</math>.</p> <p>★ Because both sodium and potassium have same number of valence electrons.</p>	$\frac{1}{2}$ $\frac{1}{2}$ 1
15.	<p><math>CuO + H_2 \rightarrow Cu + H_2O</math></p> <p>In this reaction name the reactant</p> <p>i) that is oxidised            ii) that is reduced.</p> <p>Ans. :</p> <p>i) Hydrogen or <math>H_2</math>            ii) Copper Oxide or <math>CuO</math>.</p>	$\frac{1}{2}$ $\frac{1}{2}$ 1

Qn. Nos.	Value Points	Total
17.	<p>Agricultural scientists have suggested to add a certain amount of lime powder to an agricultural field. What may be the reasons for this ? Explain.</p> <p>Ans. :</p> <ul style="list-style-type: none"> <li>★ Plants require a specific pH range for their healthy growth. <math>\frac{1}{2}</math></li> <li>★ Soil of his land is acidic. <math>\frac{1}{2}</math></li> <li>★ Lime powder is a base. <math>\frac{1}{2}</math></li> <li>★ So adding lime powder to the soil, decreases the acidic property / soil is neutralised. <math>\frac{1}{2}</math></li> </ul>	2
19.	<p>Draw the diagram of the apparatus to show that acid solution in water conducts electricity. Label the following parts :</p> <p>i) Dil. HCl solution ii) Rubber cork.</p> <p style="text-align: center;">OR</p> <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> <p>i) Test tube ii) Soap solution.</p> <p>Ans. :</p> <div style="text-align: center;">  </div>	

Qn. Nos.	Value Points	Total
	Figure — $1\frac{1}{2}$ Parts — $\frac{1}{2}$	2
	OR	
	 <p>Test tube</p> <p>Soap solution</p>	
22.	<p>Which physical properties are used in the following situations ?</p> <p>i) Gold is used to make ornaments</p> <p>ii) Nickel is used in strings of guitar.</p> <p>Ans. :</p> <p>i) ★ Shining surface / Metallic lustre</p> <p>★ Ductility</p> <p>★ Malleability (Any two) <math>\frac{1}{2} + \frac{1}{2}</math></p> <p>ii) ★ Sonorous</p> <p>★ Ductility. <math>\frac{1}{2} + \frac{1}{2}</math></p>	2
26.	<p>What is corrosion ? How can it be prevented ?</p> <p>Ans. :</p> <p>★ When a metal is attacked by substances around it such as moisture, acids the phenomenon is called corrosion. 1</p> <p>★ Preventions : Rusting can be prevented by painting, oiling, greasing, galvanising, chrome plating, anodising alloys.</p> <p>(Any two) <math>\frac{1}{2} + \frac{1}{2}</math></p>	2

Qn. Nos.	Value Points	Total
30.	<p>Write any two differences between chemical properties of metals and non-metals.</p> <p>Ans. :</p> <p><i>Chemical properties of metals :</i></p> <ul style="list-style-type: none"> <li>★ Liberates H<sub>2</sub> from dilute acids.</li> <li>★ Metallic oxides are basic in nature.</li> </ul> <p><i>Chemical properties of non-metals :</i></p> <ul style="list-style-type: none"> <li>★ Do not liberate H<sub>2</sub> from dilute acids.</li> <li>★ Oxides of non-metals are acidic in nature.</li> </ul>	1 + 1 2
31.	<p>Write the structure of Benzene and Propyne.</p> <p>Ans. :</p> <div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li>★ Benzene : 1</li> <li>★ Propyne : <math>\text{H}-\text{C}\equiv\text{C}-\underset{\text{H}}{\overset{\text{H}}{\text{C}}}-\text{H}</math> 1</li> </ul>	2
36.	<p>The reaction of Barium chloride with Aluminium sulphate solution is an example for which type of chemical reaction ? Why ? Write the balanced chemical equation for this reaction.</p> <p>Ans. :</p> <ul style="list-style-type: none"> <li>★ It is an example for double displacement reaction / Precipitation reaction. 1</li> <li>★ There is an exchange of ions between the reactants / White precipitate of Barium Sulphate is formed. 1</li> <li>★ <math>3\text{BaCl}_2 + \text{Al}_2(\text{SO}_4)_3 \rightarrow 3\text{BaSO}_4 + 2\text{AlCl}_3</math>. 1</li> </ul>	3

Qn. Nos.	Value Points	Total
38.	<p>Explain the addition and substitution reaction with the help of examples. <math>C_2H_6</math> undergoes substitution reaction but not addition reaction. Why ?</p> <p style="text-align: center;">OR</p> <p>Explain how soap cleans clothes. More amount of soap is required to clean the clothes in hard water. Why ?</p> <p>Ans. :</p> <ul style="list-style-type: none"> <li>★ Unsaturated hydrocarbons combine with hydrogen atoms in the presence of catalysts to give saturated hydrocarbons. <span style="float: right;"><math>\frac{1}{2}</math></span></li> <li>★ Example : Hydrogenation of vegetable oil.</li> </ul> <p>Or addition reactions of alkenes / alkynes.</p> <p>Or <math display="block">\begin{array}{ccc} \text{R} &amp; &amp; \text{R} \\ &amp; \diagdown &amp; / \\ &amp; \text{C} = \text{C} &amp; \\ &amp; / &amp; \diagdown \\ \text{R} &amp; &amp; \text{R} \end{array} \xrightarrow[\text{+ H}_2]{\text{Nickel}} \begin{array}{ccccc} &amp; \text{H} &amp; &amp; \text{H} &amp; \\ &amp;   &amp; &amp;   &amp; \\ \text{R} &amp; - \text{C} &amp; - &amp; \text{C} &amp; - \text{R} \\ &amp;   &amp; &amp;   &amp; \\ &amp; \text{R} &amp; &amp; \text{R} &amp; \end{array} .</math> <span style="float: right;"><math>\frac{1}{2}</math></span></p> <ul style="list-style-type: none"> <li>★ In the presence of sunlight other group of atoms can replace hydrogen atoms one by one from carbon compounds. <span style="float: right;"><math>\frac{1}{2}</math></span></li> <li>★ Example : In the presence of sunlight Chlorine replaces hydrogen atoms one by one from methane. Methane + Chlorine <math>\rightarrow</math> Chloromethane + Hydrogen chloride</li> </ul> <p style="text-align: center;">OR</p> <p><math>CH_4 + Cl_2 \rightarrow CH_3Cl + HCl.</math> <span style="float: right;"><math>\frac{1}{2}</math></span></p> <ul style="list-style-type: none"> <li>★ <math>C_2H_6</math> is saturated hydrocarbon. OR <span style="float: right;"><math>\frac{1}{2}</math></span></li> <li>★ In <math>C_2H_6</math> there will be single bond between carbon atoms / This is not an unsaturated compound. No hydrogen atoms can be added but hydrogen atoms can be substituted. <span style="float: right;"><math>\frac{1}{2}</math></span></li> </ul> <p style="text-align: center;">OR</p>	3

Qn. Nos.	Value Points	Total
	<ul style="list-style-type: none"> <li>★ The molecules of soap are sodium or potassium salts of long chain carboxylic acids.</li> <li>★ The ionic end of soap interacts with water while the carbon chain interacts with oil.</li> <li>★ The soap molecules thus form structure called micells. This forms an emulsion in water.</li> <li>★ The soap micelles thus helps in pulling out the dirt in water and we can wash our clothes clean. <math>\frac{1}{2} \times 4</math></li> <li>★ The reaction of soap with calcium and magnesium salts in hard water develop scum ( precipitation, insoluble substance ). Hence we need large amount of soap to clean clothes in hard water. 1</li> </ul>	3
43.	<p>The atomic numbers of two elements are 8 and 16 respectively. Write the electronic configuration of these two elements. Do you keep these two elements in the same group of the modern periodic table ? Justify your answer. Find out which of these two elements is more electronegative. Give reason for your answer.</p> <p><i>Ans. :</i></p> <ul style="list-style-type: none"> <li>★ Atomic number 8 — 2, 6 <math>\frac{1}{2}</math></li> <li>★ Atomic number 16 — 2, 8, 6 <math>\frac{1}{2}</math></li> <li>★ Yes, these two elements belong to the same group. <math>\frac{1}{2}</math></li> <li>★ Because in the outer most shell they have same number of electrons or both have same number of valance electrons. <math>\frac{1}{2}</math></li> <li>★ Element with atomic number 8 is more electronegative than the element with atomic number 16. <math>\frac{1}{2}</math></li> <li>★ Electronegativity decreases down the group. <math>\frac{1}{2}</math></li> </ul>	3

Qn. Nos.	Value Points	Total
45.	<p data-bbox="261 331 1326 544">Mention the difference between calcination and roasting. How these processes are used in the extraction of zinc ? Explain with the help of chemical equations. After these processes is reduction necessary to obtain zinc ? Why ?</p> <p data-bbox="261 577 347 611">Ans. :</p> <ul style="list-style-type: none"> <li data-bbox="261 651 1326 741">★ Carbonate ores are converted into oxides by heating strongly in <i>limited</i> air. This process is known as calcination. <span style="float: right;">1/2</span></li> <li data-bbox="261 779 1326 869">★ Sulphide ores are converted into oxides by heating strongly in the presence of excess of air. This process is known as roasting. <span style="float: right;">1/2</span></li> <li data-bbox="261 898 1326 1010">★ When <math>\text{ZnCO}_3</math> undergoes calcination ZnO is formed.  <math display="block">\text{ZnCO}_3 (s) \xrightarrow{\text{heat}} \text{ZnO} (s) + \text{CO}_2 (g).</math> <span style="float: right;">1</span></li> <li data-bbox="261 1048 1326 1144">★ When ZnS undergoes roasting, ZnO is formed.  <math display="block">2 \text{ZnS} (s) + 3\text{O}_2 (g) \xrightarrow{\text{heat}} 2 \text{ZnO} (s) + 2 \text{SO}_2 (g).</math> <span style="float: right;">1</span></li> <li data-bbox="261 1167 1326 1211">★ After these processes reduction is necessary. <span style="float: right;">1/2</span></li> <li data-bbox="261 1249 1326 1339">★ Because zinc oxide is then reduced to zinc using suitable reducing agent. <span style="float: right;">1/2</span></li> </ul>	4