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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, ಸೆಪ್ಟೆಂಬರ್, 2020

S.S.L.C. EXAMINATION, SEPTEMBER, 2020

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 28. 09. 2020]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Chem.)**

Date : 28. 09. 2020]

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

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ರಸಾಯನಶಾಸ್ತ್ರ / Chemistry)

(ಹಳೆ ಪಠ್ಯಕ್ರಮ / Old Syllabus)

(ಪುನರಾವರ್ತಿತ ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / Private Repeater)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : 100

[Max. Marks : 100

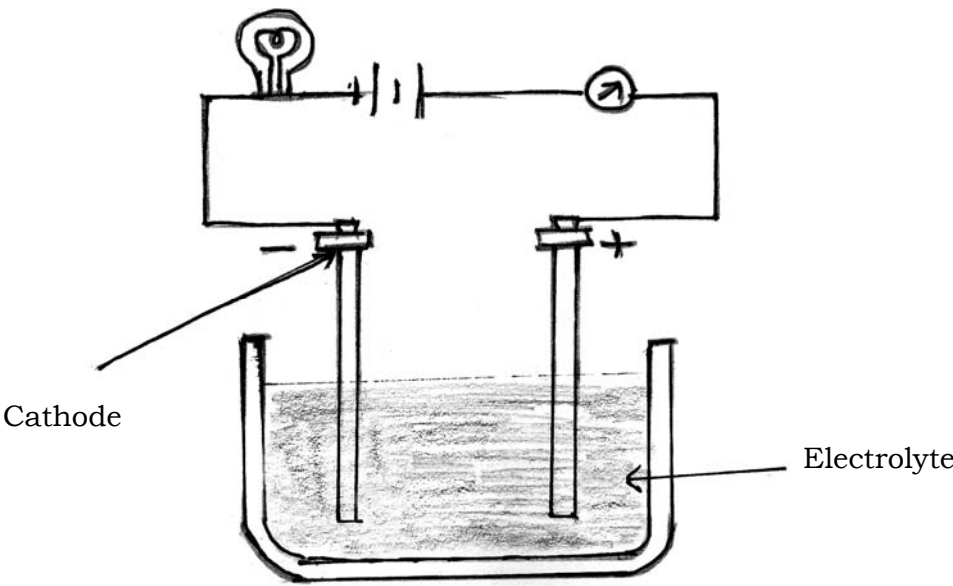
Qn. Nos.	Value Points	Total
1.	Electronic configuration of an element is $1s^2 2s^2 2p^6 3s^1$. In modern periodic table this element belongs to (A) 1st period (B) 2nd period (C) 3rd period (D) 6th period. Ans. : (C) 3rd period	1
4.	At constant temperature if 'V' is the volume of certain mass of a gas under pressure P then the relation between them is (A) $V \propto \frac{1}{P}$ (B) $P \propto \frac{1}{\sqrt{V}}$ (C) $V = P$ (D) $V \propto P$.	

PR (D)-# 43048(MA) (CHE)

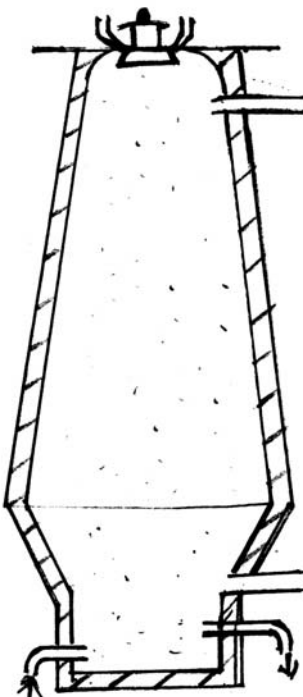
[Turn over

Qn. Nos.	Value Points	Total
	Ans. : (A) $V \propto \frac{1}{P}$	1
7.	The electrolyte which dissociates partially in aqueous solution is (A) Hydrochloric acid (B) Copper sulphate (C) Sodium chloride (D) Acetic acid.	
	Ans. : (D) Acetic acid	1
10.	The silicon compound used in the removal of hardness of water is (A) silicone (B) silicon carbide (C) zeolite (D) quartz.	
	Ans. : (C) Zeolite	1
13.	What is an alloy ?	
	Ans. : i) Homogeneous mixture of two or more metals ii) Homogeneous mixture of metal and non-metal. (Any one)	1
16.	What is rate of diffusion ?	
	Ans. : Volume of a gas diffusing per unit time	1
18.	Workers should wear gas masks in glass industries. Why ?	
	Ans. : i) To avoid silicosis $\frac{1}{2}$ ii) To avoid entry of silica particles in to lungs. $\frac{1}{2}$	1
20.	A telecommunication company A uses metallic wires and B uses optical fibres for their network. Which company has best communication network system ? Why ?	
	Ans. : B company has best communication system. Reasons : i) Flexible	1

Qn. Nos.	Value Points	Total
	ii) Can be bundled as cable iii) Light propagates through the fibre iv) It is more advantageous to long distance communication. <div style="text-align: right;">(Any two) $2 \times \frac{1}{2}$</div>	2
23.	<p>The molecular formula for the first member of organic compound that are in homologous series is CH_3OH. Predict the molecular formula of next two members of this group.</p> <p>Ans. :</p> <p>Molecular formula of second member</p> $\begin{array}{r} \text{CH}_3\text{OH} \\ \text{CH}_2 + \\ \hline \text{C}_2\text{H}_5\text{OH} \end{array}$ <p>Molecular formula of third member</p> $\begin{array}{r} \text{C}_2\text{H}_5\text{OH} \\ \text{CH}_2 \\ \hline \text{C}_3\text{H}_7\text{OH} \end{array}$	1 1 2
25.	<p>Draw the diagram of the apparatus used in electrolysis. Label the following parts :</p> i) Electrolyte ii) Cathode. <p>Ans. :</p>	

Qn. Nos.	Value Points	Total
	 <p style="text-align: right;">Diagram — 1 Labelling — $\frac{1}{2} + \frac{1}{2}$</p>	2
28.	<p>Give scientific reason :</p> <p>i) Sodium metal is preserved under kerosene ii) Aluminium oxide cannot be reduced by coke.</p> <p style="text-align: center;">OR</p> <p>Explain the method of concentration of haematite ore.</p> <p>Ans. :</p> <p>i) ★ Sodium reacts vigorously with water and air ★ Kerosene does not react with sodium. (Any one) 1</p> <p>ii) Oxygen in aluminium oxide has greater affinity towards aluminium than coke. 1</p> <p style="text-align: center;">OR</p> <p>i) The ore is concentrated by hydraulic washing $\frac{1}{2}$ ii) The crushed ore is washed with stream of water $\frac{1}{2}$ iii) Lighter impurities will be washed away $\frac{1}{2}$ iv) Heavy iron particles settle down. $\frac{1}{2}$</p>	2

Qn. Nos.	Value Points	Total
31.	<p>Define modern periodic law. How many periods and groups are there in modern periodic table ?</p> <p style="text-align: center;">OR</p> <p>Write any two advantages of modern periodic table.</p> <p>Ans. :</p> <p>i) The properties of elements are periodic functions of their atomic numbers. 1</p> <p>ii) In modern periodic table there are</p> <p style="padding-left: 20px;">★ 7 periods $\frac{1}{2}$</p> <p style="padding-left: 20px;">★ 18 groups $\frac{1}{2}$</p> <p style="text-align: center;">OR</p> <p>i) Easy access of the data of the elements</p> <p>ii) Study of chemistry is simplified</p> <p>iii) Possible to predict the atomic mass and properties of elements</p> <p>iv) Possible to predict the properties of elements by considering the position in periodic table. (Any two) 1 + 1</p>	2
37.	<p>Write the steps involved in paper manufacturing process.</p> <p>Ans. :</p> <p>i) Pulping $\frac{1}{2}$</p> <p>ii) Mixing additives $\frac{1}{2}$</p> <p>iii) Drying $\frac{1}{2}$</p> <p>iv) Finishing. $\frac{1}{2}$</p>	2
40.	<p>Unsaturated oils have less shelf life. Why ? Explain the process of converting unsaturated oils into saturated fats. Mention the advantage of this process.</p> <p>Ans. :</p> <p>i) They undergo oxidation in air and produce a foul smell $\frac{1}{2}$</p> <p>ii) Hydrogenation $\frac{1}{2}$</p> <p>iii) The process of converting liquid oils in to solid saturated fats by adding hydrogen gas $\frac{1}{2}$</p> <p>iv) Increase the shelf life. $\frac{1}{2}$</p>	2

Qn. Nos.	Value Points	Total
43.	<p>Observe the given chemical equations :</p> <p>i) $\text{Zn} + \boxed{X} \rightarrow \text{ZnSO}_4 + \text{H}_2 \uparrow$</p> <p>ii) $\text{Zn} + \boxed{X} \rightarrow \text{ZnSO}_4 + \text{SO}_2 + \text{H}_2\text{O}$.</p> <p>Write the molecular formula of the acid indicated as <i>X</i> in the above chemical reactions. What is the reason for the different products in the second reaction ?</p> <p>Ans. :</p> <p>i) The molecular formula of <i>X</i> is H_2SO_4.</p> <p>ii) Zinc reacts with concentrated sulphuric acid.</p>	1 1 2
45.	<p>Draw the diagram of blast furnace used in the extraction of iron. Label the following :</p> <p>i) Molten iron</p> <p>ii) Slag.</p> <p>Ans. :</p> <div style="text-align: center;">  </div> <p style="margin-left: 100px;">Molten iron</p> <p style="margin-left: 350px;">Slag</p>	<p>Diagram — 2</p> <p>Parts — $\frac{1}{2} + \frac{1}{2}$</p> <p>3</p>

Qn. Nos.	Value Points	Total
48.	<p>Explain the process of manufacture of sugar from sugarcane.</p> <p style="text-align: center;">OR</p> <p>Explain the first step in the preparation of ethanol from molasses. Write the balanced chemical equations when sucrose is converted into ethanol.</p> <p>Ans. :</p> <p>i) Sugarcane is cut in to pieces and crushed in a series of roller mill to get juice. $\frac{1}{2}$</p> <p>ii) The juice is warmed and ran in to settling tanks. $\frac{1}{2}$</p> <p>iii) Then decanted and made alkaline with calcium hydroxide. $\frac{1}{2}$</p> <p>iv) The clear juice is concentrated in to a syrup by evaporation under reduced pressure and crystalise. $\frac{1}{2}$</p> <p>v) The crystals are dissolved in hot water and decolourised with animal charcoal or norit and filtered. $\frac{1}{2}$</p> <p>vi) The filtrate is concentrated and evoporated under reduced pressure to get a syrup which is crystallised to get white crystals of sugar. $\frac{1}{2}$</p> <p style="text-align: center;">OR</p> <p>i) Mollasses is diluted with water and acidified by adding dilute sulphuric acid. 1</p> <p>ii) $C_{12}H_{22}O_{11} + H_2O \longrightarrow C_6H_{12}O_6 + C_6H_{12}O_6$ 1</p> <p>iii) $C_6H_{12}O_6 \longrightarrow 2C_2H_5OH + 2CO_2$. 1</p>	3
51.	<p>a) Explain the properties of carbon due to which it forms more number of compounds.</p> <p>b) Write the balanced chemical equation of the reaction that takes place in the preparation of methane by laboratory method.</p> <p>Ans. :</p> <p>a) ★ Catenation $\frac{1}{2}$</p> <p>★ Inter connecting C — C bonds to give rise large molecules. 1</p>	3

Qn. Nos.	Value Points	Total
	★ Tetravalency	$\frac{1}{2}$
	★ Carbon has 4 unpaired electrons in the excited state. These four electrons shared with atoms of different elements to form covalent compounds.	1
b)	$\text{CH}_3\text{COONa} + \text{NaOH} \longrightarrow \text{Na}_2\text{CO}_3 + \text{CH}_4$.	1
		4