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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 — 2019

S. S. L. C. EXAMINATION, MARCH/APRIL, 2019

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 02. 04. 2019] ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Chem.)**

Date : 02. 04. 2019] **CODE NO. : 83-E (Chem.)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ರಸಾಯನಶಾಸ್ತ್ರ / **Chemistry**)

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Fresh)

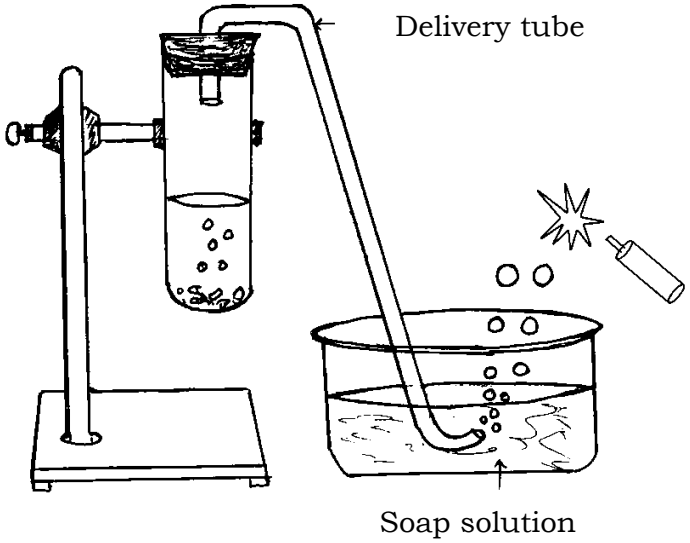
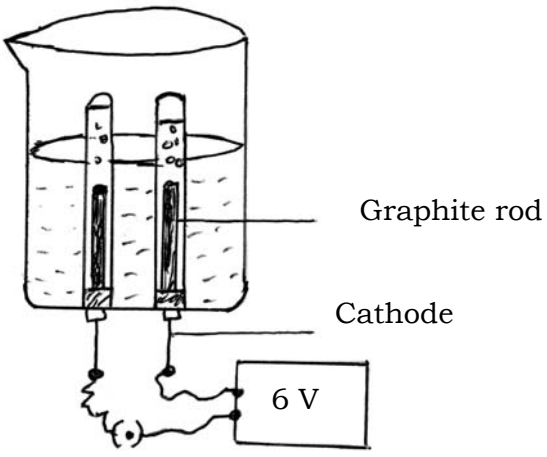
(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : **80**

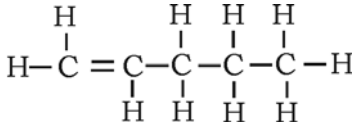
[Max. Marks : 80

Qn. Nos.	Value Points	Total
2.	The functional groups present in propanol and propanal respectively are (A) — OH and — CHO (B) — OH and — COOH (C) — CHO and — COOH (D) — CHO and — CO *Ans.* : (A) — OH and — CHO	1
5.	The chemical equation that represents neutralization reaction among the following is (A) $BaCl_2 + H_2SO_4 \rightarrow BaSO_4 + 2HCl$ (B) $MnO_2 + 4\ HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$ (C) $2\ NaOH + H_2SO_4 \rightarrow Na_2SO_4 + 2H_2O$ (D) $AgNO_3 + HCl \rightarrow AgCl + HNO_3$ Ans. : (C) — $2\ NaOH + H_2SO_4 \rightarrow Na_2SO_4 + 2H_2O$	1

Qn. Nos.	Value Points	Total
8.	The electronic configuration of element *X* is 2, 8, 8, 1 and the electronic configuration of element *Y* is 2, 8, 7. Then the type of bond formed between these two elements is (A) covalent bond (B) hydrogen bond (C) metallic bond (D) ionic bond *Ans.* : (D) — ionic bond	1
12.	Name the acid present in the stinging hair of nettle leaves. *Ans.* : Methanoic acid	1
15.	What is roasting in metallurgy ? *Ans.* : Heating of metallic ores strongly in the presence of excess air.	1
20.	Name the brown fumes liberated when lead nitrate is heated. Write the balanced chemical equation for this reaction. *Ans.* : ★ Nitrogen dioxide (NO_2) 1 ★ $2\ Pb(NO_3)_2 \rightarrow 2PbO + 4NO_2 + O_2$ 1	2
23.	What are structural isomers ? Name the first member of alkanes that shows structural isomerism. *Ans.* : Compounds with identical molecular formula but different structures are called structural isomers 1 Butane or C_4H_{10} 1	2
25.	Draw the diagram of arrangement of apparatus used to show the reaction of zinc granules with dilute sulphuric acid and testing hydrogen gas by burning. Label the following parts. (i) Soap solution (ii) Delivery tube. *Ans.* :	

Qn. Nos.	Value Points	Total
	 $1 + \frac{1}{2} + \frac{1}{2}$	2
29.	Draw the diagram of the apparatus used in the electrolysis of water. Label the following parts. (i) Graphite rod (ii) Cathode. *Ans.* :  (Cathode can be labelled by connecting graphite rod to the negative terminal of the battery) $1 + \frac{1}{2} + \frac{1}{2}$	2

Qn. Nos.	Value Points	Total
32.	There is no change in the colour of red litmus and blue litmus paper when introduced into an aqueous solution of sodium chloride. After passing direct current through the same solution, red litmus changes to blue colour. Which product is responsible for this change ? Mention any two uses of this product. *Ans.* : Sodium hydroxide / NaOH. 1 (i) De-greasing metals (ii) Soaps and detergents (iii) Paper making (iv) Artificial fibres. (Any *two*) $2 \times \frac{1}{2}$	2
36.	(i) Write the differences between saturated and unsaturated hydrocarbons. (ii) Write the molecular formula and structural formula of an alkene having five carbon atoms. OR (i) Carbon atom does not form C^{4-} anion and C^{4+} cation. Why ? (ii) How can ethanol be converted into ethanoic acid ? *Ans.* :	

Qn. Nos.	Value Points	Total
	(i) Saturated hydrocarbons : ★ In carbon compounds, carbon atoms are satisfied by a single bond between them $\frac{1}{2}$ ★ These compounds are normally not very reactive. $\frac{1}{2}$ Unsaturated hydrocarbons : ★ In carbon compounds, carbon atoms have double or triple bonds between them $\frac{1}{2}$ ★ They are more reactive than the saturated carbon compounds. $\frac{1}{2}$ (ii) C_5H_{10} $\frac{1}{2}$  $\frac{1}{2}$ OR (i) ★ Carbon can gain four electrons. But it would be difficult for the nucleus with six protons to hold on to ten electrons, that is four extra electrons. 1 ★ It can lose four electrons but it would require a large amount of energy to remove four electrons leaving behind a carbon cation with six protons in its nucleus holding on to just two electrons. 1 (ii) Alkaline potassium permanganate or acidified potassium dichromate is added to ethyl alcohol. When it is heated it oxidises to form ethanoic acid. 1 OR $CH_3 - CH_2 - OH \xrightarrow[\text{Or}\ \text{Acidic } K_2Cr_2O_7 + \text{Heat}]{\text{Alkaline } KMnO_4 + \text{Heat}} CH_3COOH$	3 3

Qn. Nos.	Value Points	Total
39.	Observe the given table and answer the following question :	

Elements	*A*	*B*	*C*	*D*	*E*
Atomic number	11	4	2	7	19

Identify the two elements that belong to the same period and the two elements that belong to the same group. Give reason for your conclusion.

Ans. :

★ Element *B* and element *D* are in same period because their atoms have two shells. $1\frac{1}{2}$

★ Element *A* and element *E* are in the same group because their outermost shell has one electron. $1\frac{1}{2}$ 3

41. Give reasons :

(i) Ionic compounds in solid state do not conduct electricity, whereas in molten state are good conductors of electricity.

(ii) Silver articles when exposed to air gradually turn blackish.

(iii) Chemical reaction does not take place when copper is added to iron sulphate solution.

OR

Give reasons :

(i) "Alloys of iron are more useful when compared to pure iron."

(ii) Copper loses its brown layer gradually when exposed to air.

(iii) Aluminium oxide is called amphoteric oxide.

Ans. :

Qn. Nos.	Value Points	Total
	(i) ★ In the solid state ionic compounds do not conduct electricity because movement of ions in the solid is not possible due to their rigid structure, because of the strong force of attraction between the positive and negative ions. 1 ★ In molten state, electrostatic forces of attraction between the oppositely charged ions are overcome due to the heat. $\frac{1}{2}$ ★ Thus the ions move freely and conduct electricity. $\frac{1}{2}$ (ii) Silver reacts with sulphur in the air to form a coating of silver sulphide. 1 (iii) Reactivity of copper is less than that of iron. 1	4
	OR	
	(i) ★ Pure iron is very soft $\frac{1}{2}$ ★ Stretches easily when hot. $\frac{1}{2}$ ★ Alloys are hard. $\frac{1}{2}$ ★ The properties of iron can be changed if it is mixed with other substances. $\frac{1}{2}$ (ii) Copper reacts with moist carbon dioxide in the air and slowly loses its shiny brown surface and gains a green coat. 1 (iii) Aluminium oxide (Al_2O_3) reacts with both acids as well as bases to produce salt and water. 1	4