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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, ಜೂನ್ — 2019

S. S. L. C. EXAMINATION, JUNE, 2019

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 24. 06. 2019] ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Chem.)**

Date : 24. 06. 2019] **CODE NO. : 83-E (Chem.)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ರಸಾಯನಶಾಸ್ತ್ರ / **Chemistry**)

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಪುನರಾವರ್ತಿತ ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ/ Private Repeater)

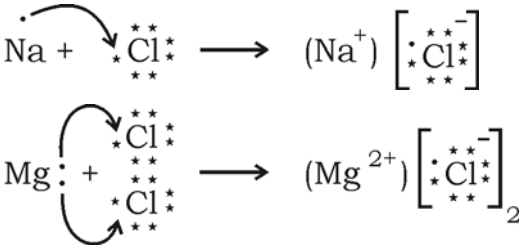
(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

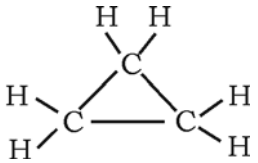
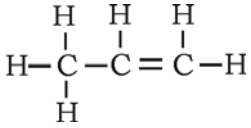
[ಗರಿಷ್ಠ ಅಂಕಗಳು : **100**

[Max. Marks : 100

Qn. Nos.	Value Points	Total
1.	The number of groups and periods in the modern periodic table respectively, are (A) 7 and 9 (B) 18 and 7 (C) 7 and 18 (D) 9 and 7. *Ans.* : (B) — 18 and 7	1
6.	The possible chemical reaction among the following is (A) $FeSO_4 + Pb \rightarrow PbSO_4 + Fe$ (B) $ZnSO_4 + Fe \rightarrow FeSO_4 + Zn$ (C) $2\,AgNO_3 + Cu \rightarrow Cu(NO_3)_2 + 2\,Ag$ (D) $PbCl_2 + Cu \rightarrow CuCl_2 + Pb.$ Ans. : (C) — $2\,AgNO_3 + Cu \rightarrow Cu(NO_3)_2 + 2\,Ag$	1

Qn. Nos.	Value Points	Total
8.	$Fe_2O_3 + 2\ Al \rightarrow Al_2O_3 + 2\ Fe$ The type of above chemical reaction is (A) combination reaction (B) double displacement reaction (C) decomposition reaction (D) displacement reaction. *Ans.* : (D) — displacement reaction	1
14.	What is a covalent bond ? *Ans.* : Chemical bond which is formed by the sharing of electrons between two atoms is known as covalent bond.	1
17.	Name the first member of alkynes and write its molecular formula. *Ans.* : Ethyne (or Acetylene) C_2H_2 $2 \times \frac{1}{2}$	1
20.	Name the gas liberated when an acid reacts with metallic carbonate. Write the chemical equation of the reaction when this gas is passed through lime water. What is the colour of the precipitate obtained in this reaction ? OR Give scientific reason : (i) While diluting an acid, the acid should be added to water. (ii) Plaster of Paris should be stored in a moisture-proof container. *Ans.* : Carbon dioxide (or CO_2) $\frac{1}{2}$ $Ca(OH)_2\ (aq) + CO_2\ (g) \rightarrow CaCO_3\ (s) + H_2O\ (l)$ 1 White precipitate. $\frac{1}{2}$ OR	2

Qn. Nos.	Value Points	Total
	(i) If water is added to concentrated acid the heat generated may cause the mixture to splash out and cause burns. The glass container may also break due to excessive local heating. (Any *one*) 1	
	(ii) Otherwise, it reacts with moisture and changes to gypsum which is a solid mass. 1	2
24.	(i) Write the balanced chemical equation for the reaction taking place when aluminium reacts with dilute hydrochloric acid.	
	(ii) Hydrogen gas is not liberated when a metal reacts with concentrated nitric acid. Give reason.	
	OR	
	Show the formation of NaCl and $MgCl_2$ with the help of electron dot structure.	
	Ans. :	
	(i) $2\ Al\ +\ 6\ HCl\ \rightarrow\ 2AlCl_3 + 3H_2$ 1	
	(ii) Nitric acid is a strong oxidising agent. $\frac{1}{2}$	
	It oxidises hydrogen produced to water and itself gets reduced to any of the nitrogen oxide. $\frac{1}{2}$	2
	OR	
	 1	
	1	2

Qn. Nos.	Value Points	Total
26.	Explain substitution reaction in hydrocarbons with an example. OR Explain the mechanism of cleaning action of soaps. *Ans.* : Saturated hydrocarbons are fairly unreactive but undergo substitution reactions in the presence of sunlight. Chlorine can replace the hydrogen atoms one by one. 1 $CH_4 + Cl_2 \rightarrow CH_3Cl + HCl$ 1 OR (i) The ionic end of soap interacts with water while the carbon chain interacts with oil. $\frac{1}{2}$ (ii) The soap molecules thus form structures called miscelles, where one end of the molecules is towards the oil droplet while the ionic end faces outside. $\frac{1}{2}$ (iii) Thus an emulsion forms in water. $\frac{1}{2}$ (iv) The soap miscelles help in pulling out the dirt in water and thus cleans clothes. $\frac{1}{2}$	2 2
30.	The general formula of two specific groups of saturated and unsaturated hydrocarbons is C_nH_{2n}. Write the structures of the member of each group when $n = 3$. *Ans.* :  Cyclopropane 1  Propene 1	2

Qn. Nos.	Value Points	Total
32.	The position of elements *A, B, C, D* in the modern periodic table is given. Answer the following questions by observing the table :	

	Group 1	*Group 2*
Period 3	*A*	*B*
Period 4	*C*	*D*

(i) Which element has the highest atomic size ? Why ?

(ii) Which element has the least metallic property ? Why ?

Ans. :

(i) *C* : New shells are added down the group (OR down the group, electrons enter the new shell) 1

(ii) *B* : Across the period, the tendency to lose electrons decreases (OR Electrons remain in the same shell) 1 — 2

36. Write the balanced chemical equation for the following reactions :

(i) Hydrogen + Chlorine $\rightarrow$ Hydrogen chloride

(ii) Sodium + Water $\rightarrow$ Sodium hydroxide + Hydrogen.

Ans. :

$H_2 + Cl_2 \rightarrow 2\,HCl$ 1

$2Na + 2H_2O \rightarrow 2NaOH + H_2$ 1 — 2

39. What are malleability and ductility with respect to metals ?

Ans. :

The property that some metals can be beaten into sheets is called malleability. 1

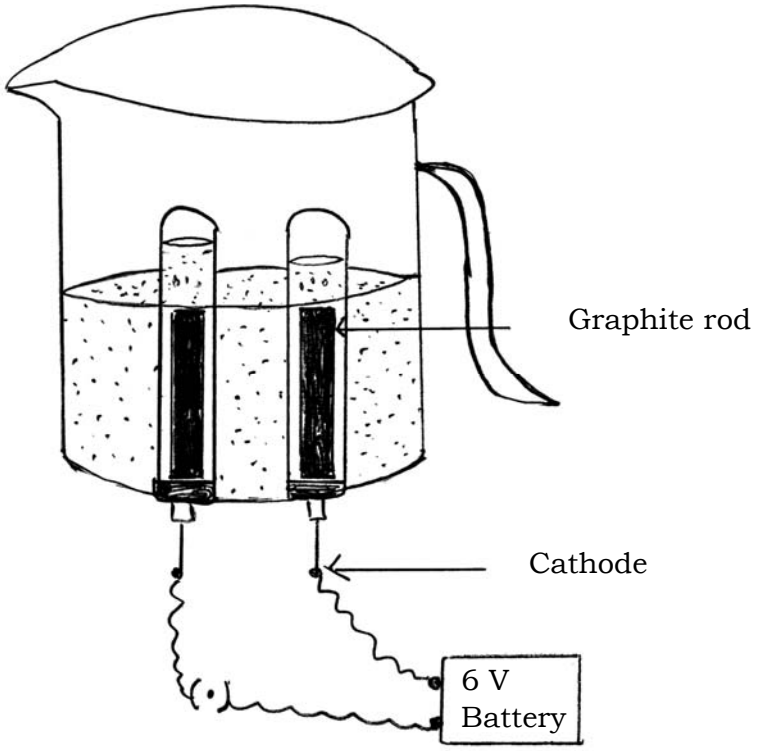
The ability of metals to be drawn into thin wires is called ductility. 1 — 2

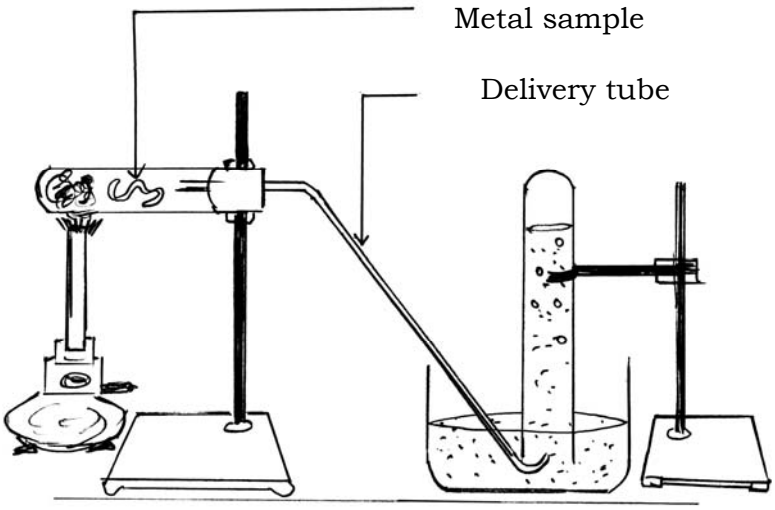
42. State modern periodic law. Name the elements of first period in the modern periodic table.

Ans. :

Properties of elements are a periodic function of their atomic number. 1

Elements of the first period are hydrogen (H) and helium (He). 1 — 2

Qn. Nos.	Value Points	Total
45.	Draw the diagram of the apparatus used in electrolysis of water. Label the following parts : (i) Cathode (ii) Graphite rod. *Ans.* : Apparatus showing electrolysis of water :  $2 + \frac{1}{2} + \frac{1}{2}$	3
48.	Draw the diagram of the arrangement of apparatus to show the action of steam on a metal. Label the following parts : (i) Metal sample (ii) Delivery tube. *Ans.* :	

Qn. Nos.	Value Points	Total
	Apparatus showing action of steam on metals.  $2 + \frac{1}{2} + \frac{1}{2}$	3
51.	(i) What is neutralisation reaction ? (ii) Name the products of chlor-alkali process. Write one use of each. *Ans.* : (i) The reaction between an acid and a base to give a salt and water is known as a neutralisation reaction. 1 (ii) The products of chlor-alkali process are : ★ hydrogen $\frac{1}{2}$ ★ chlorine $\frac{1}{2}$ ★ brine containing NaOH. $\frac{1}{2}$ Uses of hydrogen : used as ★ a fuel ★ margarine ★ ammonia for fertilisers (Any *one*) $\frac{1}{2}$	

Qn. Nos.	Value Points			Total
	Uses of chlorine : ★ used in water treatment ★ used as a cleaning agent in swimming pools ★ used in making PVC, CFCs ★ used as a disinfectant ★ used as a pesticide.	(Any *one*)	$\frac{1}{2}$	
	Uses of NaOH : ★ used for degreasing metals ★ used for making paper ★ used for making soaps and detergents ★ used for making artificial fibres.	(Any *one*)	$\frac{1}{2}$	4