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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 — 2017

S. S. L. C. EXAMINATION, MARCH/APRIL, 2017

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 07. 04. 2017] ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Chem.)**

Date : 07. 04. 2017] **CODE NO. : 83-E (Chem.)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ರಸಾಯನಶಾಸ್ತ್ರ / Chemistry)

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ + ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Fresh + Regular Repeater)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

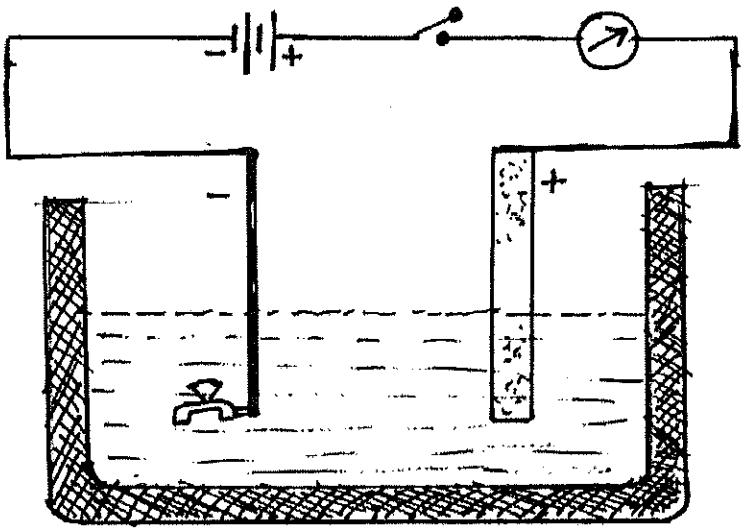
[ಗರಿಷ್ಠ ಅಂಕಗಳು : **80**

[Max. Marks : 80

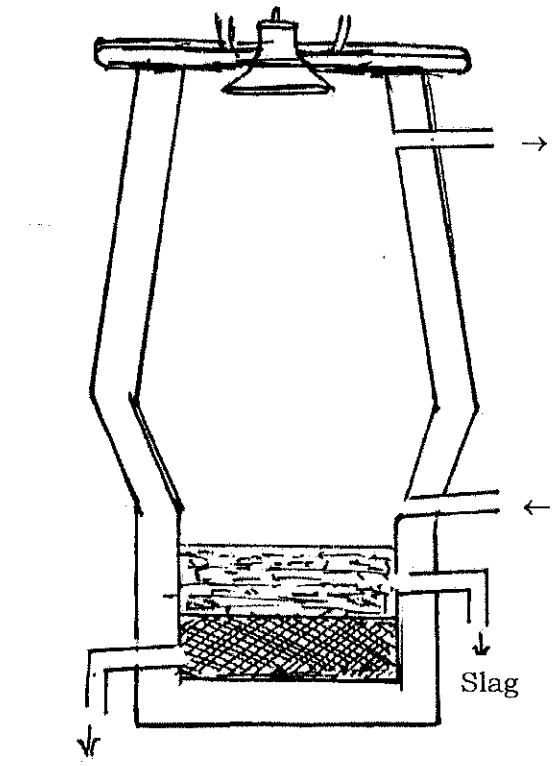
Qn. Nos.	Value Points	Total
2.	The atomic number of an element '*X*' is 16. In the modern periodic table the element '*X*' belongs to this block and period.	
	Ans. : (A) — *P*-block, 3rd period	1
5.	An example for polyfunctional compound is	
	Ans. : (A) — Glycine	1
9.	The constituents of alloy which is used in the manufacture of permanent magnets are	
	Ans. : (B) — Nickel + Cobalt + Iron + Aluminium	1
13.	Write one use of Zeolite.	
	Ans. :	
	Used in removal of hardness of water.	1

Qn. Nos.	Value Points	Total
15.	Write one difference between saturated hydrocarbons and unsaturated hydrocarbons. *Ans.* : *Saturated hydrocarbons* : i) Composed entirely of single bonds between carbon atoms ii) Stable compounds / less reactive. *Unsaturated hydrocarbons* : i) Have one or more double or triple bonds between two successive carbon atoms somewhere in the chain. ii) Unstable compounds / more reactive. (any *one*)	1
16.	When the mixture of silica and coke is heated in an electrical furnace, silicon carbide is formed instead of silicon. What is the reason ? *Ans.* : Less silica / excess of coke is used in the furnace. (any *one*)	1
18.	State Faraday's first law of electrolysis. *Ans.* : The mass of substance deposited at either electrodes during electrolysis is proportional to the product of current and to the time.	1
20.	In the modern periodic table, how does the atomic size of the elements vary along the period and down the group ? Explain. *Ans.* : The atomic size decreases along the period. Along the period there will be no change in the number of shells. But more electrons added to the same shell and the nucleus exerts greater inward pull on the electrons. $2 \times \frac{1}{2}$ The atomic size increases down the group. Because down the group new shell is added to the atom or the number of shell increases. $2 \times \frac{1}{2}$	2

Qn. Nos.	Value Points		Total
23.	How can coloured glass be obtained from molten glass ? Name the chemical compounds to be added to molten glass to obtain the following coloured glass. (a) Yellow glass (b) Blue glass. **OR** Give scientific reason : (a) Ceramics are used in electrical gadgetry. (b) Wax paper is used in food preservation. *Ans.* : Compounds of certain metals are added to the molten glass. Yellow colour — Ferric compounds Blue colour — Cobalt compounds. OR i) Ceramics are insulators. ii) Moisture resistant.	1 $\frac{1}{2}$ $\frac{1}{2}$ 1 1	2 2
26.	The given equation represents the reaction of copper sulphate with an element *X*. $CuSO_4 + X \rightarrow Cu + Y$ Which element is represented by *X*, among Fe and Ag ? Justify your answer. Write the molecular formula of the compound represented by *Y*. *Ans.* : Fe The reactivity of iron (Fe) is more than copper (Cu) $FeSO_4$.	$\frac{1}{2}$ 1 $\frac{1}{2}$	2

Qn. Nos.	Value Points	Total
29.	Air filled balloon is kept inside the glass jar fitted with a vacuum pump. What will be the change in the size of the balloon when air is taken out with the help of vacuum pump from the jar ? State the law which supports your answer. *Ans.* : The size of balloon increases. 1 "At constant temperature, the volume of a given mass of dry gas is inversely proportional to its pressure." 1	2
33.	Draw the diagram of the apparatus used in electroplating. *Ans.* : 	2
36.	(a) Write the steps of manufacturing sugar from sugarcane. (b) In the manufacture of sugar mention the importance of the following : (i) Norit (ii) Calcium hydroxide. **OR**	

Qn. Nos.	Value Points	Total
	Briefly explain the manufacture of ethyl alcohol from molasses. *Ans.* : a) i) Extraction of the juice from the source ii) Purification of the juice iii) Concentration and crystallization iv) Separation and drying of crystals. $4 \times \frac{1}{2}$ b) i) Norit — to decolourise the sugar solution. ii) Calcium hydroxide — To make the juice alkaline and impurities get precipitated. $\frac{1}{2}+\frac{1}{2}$ OR i) Molasses is diluted with water. ii) Acidified by adding sulphuric acid. iii) Yeast is added to the solution and the container is closed. iv) The temperature is maintained around 308 K. Fermentation takes place in about a week. v) The fermented matter called 'wort' contains 6% to 10% alcohol. vi) It is fractionally distilled to obtain 95% alcohol. $6 \times \frac{1}{2}$ *Note* : No marks for chemical equations of fermentation.	3 3

Qn. Nos.	Value Points	Total
38.	Draw the diagram of the blast furnace used in the extraction of iron and label the following parts : (a) Molten iron (b) Slag. *Ans.* :  2 Two parts — $\frac{1}{2} + \frac{1}{2}$	3
41.	(a) What is isomerism ? Name the isomers of butane. (b) Name the air pollutant liberated in the incomplete combustion of methane. (c) Write the importance of hydrogenation of oils. *Ans.* : a) Phenomenon in which organic compounds have same molecular formula with different structural arrangement of atoms in them is known as isomerism. 1 *n*-butane and iso-butane. $\frac{1}{2} + \frac{1}{2}$	

Qn. Nos.	Value Points		Total
	b) Carbon monoxide (CO)	1	
	c) Hydrogenated oils —		
	i) have more shelf life, easy to transport		
	ii) do not produce foul smell.	$\frac{1}{2} + \frac{1}{2}$	4