CCE RF

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 — 2015

S. S. L. C. EXAMINATION, MARCH/APRIL, 2015

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 01. 04. 2015] ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Chem.)**

Date : 01. 04. 2015] **CODE NO. : 83-E (Chem.)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ರಸಾಯನಶಾಸ್ತ್ರ / **Chemistry**)

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Fresh)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

[ಪರಮಾವಧಿ ಅಂಕಗಳು : **80**

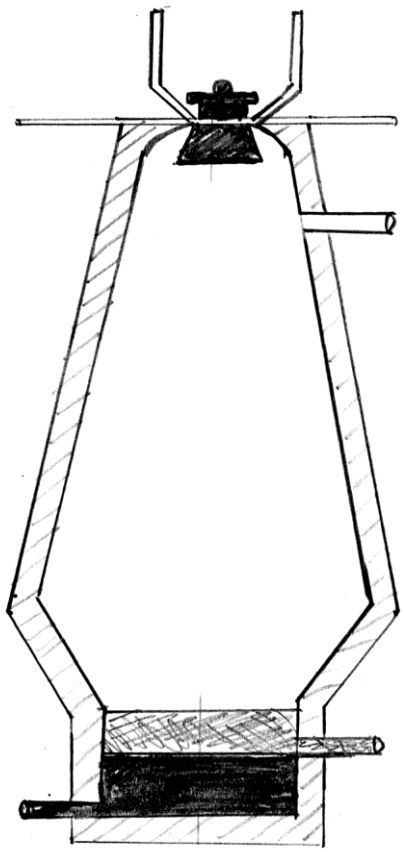
[Max. Marks : 80

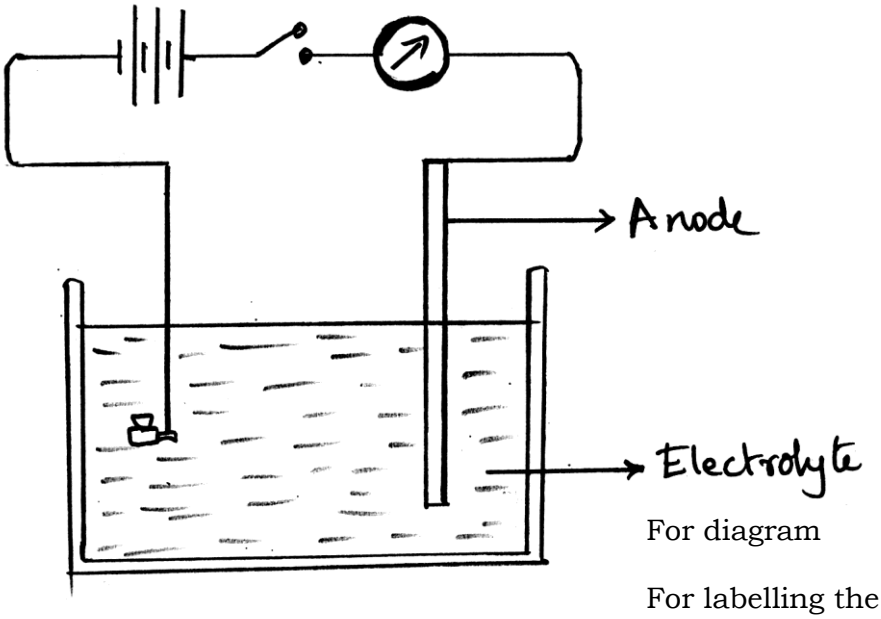
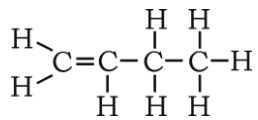
Qn. Nos.	Value Points	Total
2.	The major constituent of freshly obtained molasses is *Ans.* : (A) — sucrose	1
4.	In a triad of *A, B, C* elements if the atomic masses of *A* and *C* respectively are 100 and 200, then the atomic mass of *B* is *Ans.* : (D) — 150	1
5.	If the fermentation of molasses during the manufacturing of ethyl alcohol is delayed then the conclusion that can be drawn is *Ans.* : (B) — molasses is not diluted	1

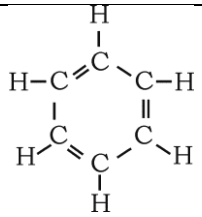
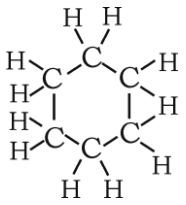
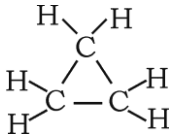
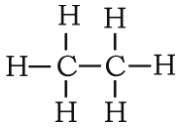
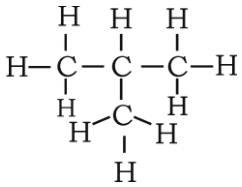
Qn. Nos.	Value Points	Total
11.	Names of alloys are given in **List-A**. Match them with their constituents given in **List-B** and uses given in the **List-C** : $4 \times 1 = 4$	
	Ans. : ***List - A*** ***List - B*** ***List - C***	
	(A) Stainless Steel (b) Iron + carbon + chromium + nickel (iii) Surgical instruments	1
	(B) Alnico (a) Iron + nickel + cobalt + aluminium (v) Permanent magnets	1
	(C) Invar Steel (d) Iron + carbon + nickel (large quantity) (vi) Precision measuring instrument	1
	(D) Brass (f) Copper + zinc (i) Electrical contact part	1
13.	Name the process of converting crude oil obtained from seeds into commercially useful fuel.	
	Ans. : Trans-esterification.	1
14.	Name two monosaccharide constituents of sucrose.	
	Ans. : Glucose, Fructose. $\frac{1}{2} + \frac{1}{2}$	1
15.	How can ceramic articles be given a coloured tinge ?	
	Ans. : By adding metallic oxides.	1
16.	'Soda glass must not be used in making laboratory heating apparatus.' Justify.	
	Ans. : It cannot withstand temperature fluctuations.	
	OR	
	It may break (any *one*)	1
19.	Write the function of the following parts of nuclear reactor along with the material used in making it :	
	(a) Control rod (b) Moderator.	
	Ans. :	
	a) *Control rod* :	
	Function : Used to control the nuclear reaction. $\frac{1}{2}$	
	OR	

Qn. Nos.	Value Points	Total
	Used to control the number of neutrons causing fission reaction by absorbing neutrons. *Material used* : Cadmium / boron carbide. $\frac{1}{2}$ b) *Moderator* : *Function* : Used to slow down fast moving neutrons. $\frac{1}{2}$ *Material used* : Graphite / heavy water. $\frac{1}{2}$	2
20.	What are functional groups ? Name the class of compounds containing $— NH_2$ as the functional group. *Ans.* : Functional groups are the sites where reactions occur in organic molecules. OR Functional groups are specific groups of atoms or bond within molecules that are responsible for characteristic chemical reactions of those molecules. (any *one*) 1 Class of organic compounds having $—NH_2$ as functional groups are called amines. 1	2
21.	Give scientific reason : (a) The atomic size increases down the group in the periodic table. (b) 18th group of periodic table is also called zero group. *Ans.* : a) Down the group new shells are added to the atoms. 1 b) Because valency of 18th group elements is usually zero. 1	2

Qn. Nos.	Value Points	Total
22.	Explain the method of extraction of amorphous silicon with the help of chemical equation. OR Write the balanced equations of chemical reactions taking place under the following circumstances : (a) Steam is passed over red hot silicon. (b) Silicon is burnt in air. *Ans.* : Powdered silica is mixed with magnesium powder in the fire clay crucible. $\frac{1}{2}$ By-product magnesium oxide is removed by washing it with concentrated hydrochloric acid. $\frac{1}{2}$ Unreacted silica is removed by treating it with hydrofluoric acid. $\frac{1}{2}$ $SiO_2 + 2Mg \rightarrow Si + 2MgO$ $\frac{1}{2}$ OR a) $Si + 2H_2O \rightarrow SiO_2 + 2H_2\uparrow$ 1 b) $Si + O_2 \rightarrow SiO_2$ 1	2 2
25.	Gas *A* is four times denser than gas *B*. Find the ratio between their rates of diffusion. *Ans.* : Let d_A and r_A be the density and rate of diffusion of gas *A* respectively. Let d_B and r_B be the density and rate of diffusion of gas *B* respectively. $\therefore \quad d_A = 4\,d_B$ $\frac{1}{2}$ $\therefore \quad r_A \propto \frac{1}{\sqrt{d_A}}$	

Qn. Nos.	Value Points	Total
	$r_B \propto \frac{1}{\sqrt{d_B}}$	
	$\therefore \quad \frac{r_A}{r_B} = \frac{1/\sqrt{d_A}}{1/\sqrt{d_B}}$ $\frac{1}{2}$	
	i.e. $\frac{r_A}{r_B} = \frac{\sqrt{d_B}}{\sqrt{d_A}} = \sqrt{\frac{d_B}{d_A}}$	
	i.e. $\frac{r_A}{r_B} = \sqrt{\frac{1}{4}} = \frac{1}{2}$ $\frac{1}{2}$	
	$r_A : r_B = 1 : 2$ $\frac{1}{2}$	2
28.	Draw the diagram of blast furnace used in the extraction of iron.	
	Ans. : 	2

Qn. Nos.	Value Points	Total
37.	Draw the diagram showing electroplating of a brass article with silver and label the following : (a) Anode (b) Electrolyte. *Ans.* :  For diagram 2 For labelling the parts $\frac{1}{2}+\frac{1}{2}$ 1	3
41.	Write the structural formulae of the following : (a) Butene (b) Ethyne (c) Benzene (d) Cyclohexane. OR What is Catenation ? Write the structural formulae of the following : (a) Cyclopropane, (b) Ethane, (c) Isobutane. *Ans.* : a)  1 b) H — C ≡ C — H 1	

Qn. Nos.	Value Points		Total
	c) 	1	
	d) 	1	4
	OR		
	The property of carbon atom to form chain structure by forming covalent bond with other carbon atoms is called catenation.	1	
	a) 	1	
	b) 	1	
	c) 	1	4