SSLC MODEL EXAMINATION, FEBRUARY – 2019

CHEMISTRY

(English)

Time : 1½ Hours Total Score :40

Q	ANSWER/HINT	CHOICE	SCORE	TOTAL SCORE
	SECTION - A			
1	6	**Any four**	**1**	**1**
2	22.4 L		**1**	**1**
3	-COOH (Carboxylic group)		**1**	**1**
4	Antipyretics		**1**	**1**
5	Butane (C_4H_{10})		**1**	**1**
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	SECTION - B			
6	**(a)** Cu	**Any four**	**1**	**2**
	(b) $Mg^0 + Zn^{2+}SO_4^{2-} \rightarrow Mg^{2+}SO_4^{2-} + Zn^0$		**1**	
7	**(a)** Copper pyrites		**1**	**2**
	(b) Magnetite (Fe_3O_4)		**1**	
8	**(a)** 8 g H_2 *(Greater number of moles)*		**1**	**2**
	(b) 28 g N_2 *(one mole of the gas)*		**1**	
9	**(a)** Propan-2-ol		**1**	**2**
	(b) CH_3-CH_2-CH_2-OH		**1**	
10	**(a)** $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^4$		**1**	**2**
	(b) 2		**1**	
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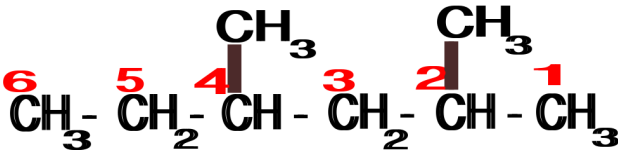
	SECTION - C			
11	**(a)** Limestone and Clay	**Any four**	**1**	**3**
	(b) In order to control the setting time of cement		**1**	
	(c) The process in which cement ***combines with water and sets into a hardened mass*** is known as setting of cement. ***To prevent cement from setting, it is not kept in moist places***		**1**	
12	**(a)** Group **8** $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3s^2\ 3p^6\ 3d^6\ 4s^2$		**1**	**3**
	(b) 3+		**1**	
	(c) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3s^2\ 3p^6\ 3d^5$		**1**	
13	**(a)** When the rate of forward reaction becomes equal to that of backward reaction		**1**	**3**
	(b) Decreases		**1**	

	(c) The decomposition of N_2O_4 is an endothermic reaction. Hence at low temperatures , endothermic reaction proceeds slowly.		**1**	
14	**(a)** $C_2H_6 + Cl_2 \rightarrow$ ***C_2H_5Cl*** + HCl		**1**	**3**
	(b) $C_3H_6 + Cl_2 \rightarrow$ ***$C_3H_6Cl_2$***		**1**	
	(c) *n* $CH_2=CH_2 \rightarrow$ ***$[-CH_2-CH_2-]_n$***		**1**	
15	**(a)** 2:1		**1**	
	(b) (i) 2 x N_A **(ii)** Hydrogen , **3 moles** *(Mass of hydrogen needed to react with 32 g of oxygen = 4 grams. Remaining 6 g of hydrogen = **3 moles**)*		**1** **1,1**	**3**

	SECTION - D			
16	**(a)** Bauxite ($Al_2O_3.2H_2O$)		**1**	**4**
	(b) On adding the ore to a suitable solution, a chemical reaction takes place and ***the ore dissolves in the solution. The insoluble impurities are filtered off.*** The pure ore is separated from the filtrate by a chemical reaction. This process is known as leaching		**1**	
	(c) Cryolite is added to alumina ***to reduce its melting point and increase its electrical conductivity.***		**1**	
	(d) Alnico – For making permanent magnets		**1**	
17	**(a)** 		**1**	**4**
	(b) Methyl (!)		**1**	
	(c) 2, 4 – Dimethyl hexane	**Any four**	**1**	
	(d) $CH_3-CH_2-CH_2-CH_2-CH_2-CH_2-CH_3$		**1**	
18	**(a)**Ethanol is manufactured by ***fermenting diluted molasses by adding yeast.*** Here the reactions occur in the presence of the enzymes present in yeast. ***Within a few days it changes to ethanol in the presence of the enzymes invertase and zymase present in yeast.*** $C_{12}H_{22}O_{11} + H_2O \xrightarrow{\text{Invertase}} C_6H_{12}O_6 + C_6H_{12}O_6$ Sucrose (Sugar) — Glucose — Fructose $C_6H_{12}O_6 \xrightarrow{\text{Zymase}} 2C_2H_5\text{-}OH + 2CO_2$ Ethanol (Wash) ***Additional information*** *Wash (8-10% ethanol)is then subjected to fractional distillation to get 95.6 % of ethanol (Rectified spirit)-*		**2**	**4**

	(b) CH_3-CH_2-OH + CH_3COOH → **CH_3COO-CH_2-CH_3** + H_2O		**1**	
	(c) Esters		**1**	
19	**(a)** Mg		**1**	**4**
	(b) Mg to Fe		**1**	
	(c) Fe		**1**	
	(d) $Mg + Fe^{2+} \rightarrow Mg^{2+} + Fe$		**1**	
20	**(a)** Prepare the dilute solution of sodium thio sulphate in a beaker. Take equal volumes of this solution in two boiling tubes. Heat one boiling tube for some time. Add dilute hydrochloric acid in equal amounts in both the boiling tubes. Yellow precipitate of Sulphur is appearing quickly in the test tube which is heated. The reaction occurs slowly in the other one.		**2**	**4**
	(b) Increases .		**1**	
	(c) Increase the concentration of sodium thio sulphate solution or hydrochloric acid solution		**1**	

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