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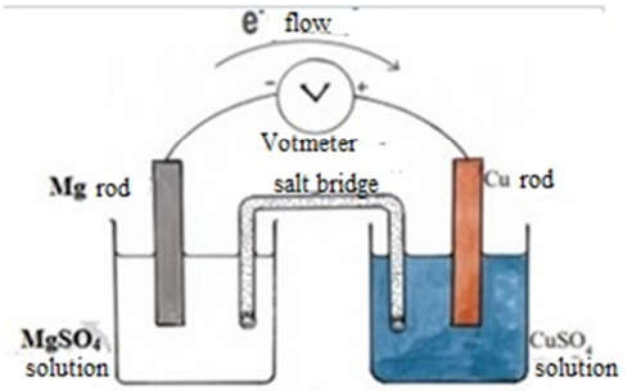
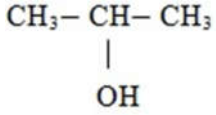
SSLC EXAMINATION, MARCH-2020

Time: $1^{1/2}$ Hours **CHEMISTRY** Total Score: 40

Qn No	Scoring indicators	Split score	Total
	SECTION A **Answer any FOUR questions. 1 score each**		
1	14	1	1
2	Hydrogen (H_2) gas	1	1
3	Magnetic separation	1	1
4	Isoprene	1	1
5	22.4 L	1	1
	SECTION B **Answer any FOUR questions. 2 score each**		
6	a. Charles' Law b. Boyle's Law	1 1	2
7	a. (ii) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^1$ b. The electronic configuration in which half filled d subshell (d^5) has more stability	1 1	2
8	a. Tin b. Low melting point (low melting metal)	1 1	2
9	a. Propene : $CH_3 - CH = CH_2$ b. But - 1 - yne : $CH_3 - CH_2 - C \equiv CH$	1 1	2
10	a. By the fermentation of dilute solution of molasses (sugar solution) by adding yeast. b. Poisonous substances are added to ethanol meant for industrial purpose to prevent its misuse as a beverage. This product is known as '**denatured spirit**'.	1 1	2
	SECTION C **Answer any FOUR questions. 3 score each**		
11	a. Sodium ion (Na^+), chloride ion (Cl^-) b. Chlorine gas (Cl_2) c. $Na^+ + e^- \rightarrow Na$ (Reduction)	1 1 1	3
12	a. Limestone ($CaCO_3$), Coke (C) b. Carbon monoxide (CO) c. (iii) $CaO + SiO_2 \rightarrow CaSiO_3$	1 1 1	3
13	a. 1 GMM CH_4 = 16 g b. 10 mole No. moles of molecules = Given mass / GMM = 160 / 16 = 10 mole c. 80 g	1 1	3

	1 GMM CH_4 = 16 g = 6.022 x 10^{23} Mass = 5 GMM = 5 x 16 = 80 g	1	
14	a. Ammonium chloride [NH_4Cl] and lime water [Calcium hydroxide- $Ca(OH)_2$] b. Red litmus paper turns to blue colour c. Basic nature	1 1 1	3
15	a. 6 carbon b. Positions of branches: 2, 4 c. 2,4 – Dimethylhexane	1 1 1	3
	SECTION D **Answer any FOUR questions. 4 score each**		
16	a.  b. Anode : Mg c. $Cu^{2+} + 2e^- \rightarrow Cu$ (Reduction)	2 1 1	4
17	a. BA b. AC c. (ii) Both reactants and products co-exist. (iii) The rates of forward and backward reactions are equal	1 1 2	4
18	a. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^2$ b. 25 c. Block - d block, Period - 4 d. In case of d block elements, along with outermost 's' electrons, the 'd' electrons from the penultimate shell are also lost as the energies of these subshells are almost equal.	1 1 1 1	4
19	a.  b. C_3H_8O c. $CH_3-CH_2-O-CH_3$ [$CH_3-O-CH_2-CH_3$]	1 1	4

	Methoxyethane			2	
20	A Reactants	B Products	C Name of Reaction	1	4
	$CH_4 + Cl_2$	$CH_3Cl + HCl$	Substitution	1	
	$CH_4 + 2O_2$	$CO_2 + 2H_2O$	Combustion	1	
	$CH_3 - CH_2 - CH_3$	$CH_2 = CH_2 + CH_4$	Thermal cracking	1	
	$CH \equiv CH + H_2$	$CH_2 = CH_2$	Addition		

Prepared by:

Shinoy M M
HST-PS
A+ Educare

AplusEducare Blog
Mob: 9072708051
www.apluseducare.in
www.apluseducare.blogspot.com