

**FIRST TERM EVALUATION 2022**  
**STANDARD SSLC CHEMISTRY**  
**Answer key by:**  
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1	Iron	
2	22.4L	
3	s	
4	$6.022 \times 10^{23}$ molecules	
5	2 [2s. 2p]	
6	a) Magnesium b) Hydrogen	
7	a) Oxidation state of Mn in $MnO_2$ $MnO_2 = 1 \times x + 2 \times (-2) = 0$ $x - 4 = 0$ $x = +4$ b) shows different oxidation states	
8	a) 44g b) Number of GMM = $\frac{\text{Given mass}}{\text{GMH}} = \frac{220}{44} = 5$ GMM	
9	a) i) The molecules are in a state of rapid random motion in all direction ii) AS the collisions of molecules are perfectly elastic in nature, there is no loss of energy.	
10	a) $1s^2 2s^2 2p^6 3s^1$ b) +1	
11	a) $x = 200K$ $y = 1500L$ b) if temperature increases, volume of gas also increases c) Charles Law	
12	$26 \text{ Fe} = 1s^2 2s^2 2p^6 3s^2 3p^6 3d^6 4s^2$ b) period Number = 4 Group Number = 8 c) $\text{Fe}^{2+} = 1s^2 2s^2 2p^6 3s^2 3p^6 3d^6$	
13	a) X b) $X = Mg$ c) $Zn^{2+} + 2e^- Zn^0$	
14	i) $\frac{x}{2}, 6 = 40$ ii) Avogadro's law	

15	<p>a) Chromium <math>_{24}\text{Cr} = 1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^1</math>  half filling or full filling electrons d subshells gives more stability</p> <p>b) d- block</p>	
16	<p>a) atomic number of Q= 16</p> <p>b) P</p> <p>c) S</p> <p>d) <math>\text{S}_2\text{Q}_2</math>  <math>\text{S}_2\text{Q}</math></p>	
17	<p>a) Molecular mass of <math>\text{SO}_2 = 1 \times 32 + 2 \times 16</math>  <math>= 32 + 32 = 64</math></p> <p>b) 22.4 L</p> <p>c) No of molecules in 112L of <math>\text{SO}_2</math>  <math>= \frac{\text{Given volume}}{\text{Volume in STP}} = \frac{112}{22.4} = 5 \text{ mole}</math></p> <p>d) Number of molecules in 170g of <math>\text{NH}_3</math>, <math>170 = 10 \text{ moles}</math>  <math>= 10 \times 6.022 \times 10^{23} \text{ Molecules}</math></p>	
18	<p>a) Zn</p> <p>b) Copper</p> <p>c) Yes, Here oxidation and reduction takes place simultaneously hence, it is a redox reaction</p>	
19	<p>a) <math>1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^1</math></p> <p>b) d - Block</p> <p>c) This is because all of them contain incompletely filled d- subshell where as the outer shell electronic configuration remains the same</p> <p>d) In d block elements electrons in s subshell and 3d subshells also participate in chemical reactions So d block elements show variable oxidation states</p>	
20	<p>a) 1) Boyle's Law  2) Avogadro Law</p> <p>b) Bottom of the water has high pressure, as a result the volume also decreases. Pressure and volume are inversely proportional to each other If the number of molecules increases the volume of gas increases</p>	