Q	**FIRST TERMINAL EVALUATION 2017** **CHEMISTRY** ANSWER KEY	SCORE
1	$1p^3$	**1**
2	Avogadro Number	**1**
3	c) As fuel in nuclear reactors	**1**
4	MnO_2	**1**
5	a) d b) [Ar] $3d^3\ 4s^2$	**1** **1**
6	a) 1:3 b) 15	**1** **1**
7	a) Turns blue , Ammonia (NH_3) b) $NH_4Cl \rightarrow NH_3 + HCl$	**1** **1**
8	a) 500 ml NaOH solution b) 500 ml NaOH solution	**1** **1**
9	$CuCl - Cu^{+}$ $CuCl_2 - Cu^{2+}$	**1** **1**
10	a)increases b)increases ;molecules come closer.Number of molecules per unit volume increases.Rate of collision increases. Hence the rate of the reaction increases	**1** **1**
11	a)16 b)16 c)$3s^2\ 3p^6$	**1** **1** **1**
12	a)44 g b) 2 moles	**1** **2**
13	a) Test tube(figure) B (Test tube in which powdered marble is used) b) Surface area When solids are made into small pieces or powder, their surface area increases. As a result the number of molecules undergoing effective collisions also increases. Hence the rate of reaction increases.	**1** **1+ 1**
14	a) Fe - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^6\ 4s^2$ or [Ar] $3d^6\ 4s^2$ b) 4 c) Mn (manganese)	**1** **1** **1**
15	a) 6.022×10^{23} or N_A b) 108 g / 12 g = 9 GAM	**1** **2**
16	* Number of Moles = Mass given in grams / Gram atomic mass = 490g / 98 g = 5 moles Number of molecules = Number of moles x Avogadro number = 5 x 6.022×10^{23} * Total number of atoms = Total number of atoms in one molecule x number of molecules = 7 x 5 x 6.022×10^{23}	**1** **1 +1**

17	a) Q b) R c) S d) Q	**1+1+1+1**
18	A) At STP 22.4 litres = 1 mole = 6.022×10^{23} molecules 1 litre = $6.022 \times 10^{23}/22.4$ molecules 10 litres= $10 \times 6.022 \times 10^{23}/22.4$ molecules = x molecules 2 litres = x /5 molecules OR 10 litres of the gas at STP contains x number of molecules (Given) Hence 2 litres of the gas contains = x /5 molecules (!) B) 5 x 6.022 x 10^{23} **or** 5 x N_A	**2** **2**
19	a) i) **B** ii) **A** iii) **A** iv) **B** b) A=1 B = 2 c) BA_2	**2** **1** **1**
20	a) Experiment b)As temperature increases the number of molecules with threshold energy increases. As a result, the number of effective collisions increases and thus rate of reaction also increases	**2** **2**
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