

FIRST MID TERM EVALUATION JULY : 2016 -'17

Time : 45 mts

Std. X

CHEMISTRY

Total Score : 20

Instructions:

• Attempt the questions based on the instructions provided.

1 Identify the subshell with the highest energy. 1

(1s, 2p, 3d, 4s)

2 By following the given model, fill up suitably.

a) Actinoids : 5f; Lanthanoids : 1

b) 1 GMM CO_2 : 6.022×10^{23} molecules; 1 GMM CO : 1

3

i) $1s^2 2s^2 2p^3$

ii) $1s^2 2s^2 2p^5 3s^2$

Which of the given electronic configurations does not make sense? What is wrong with that configuration? 2

4 An element P in group 16 has three shells. It combines with an element Q of the third period which contains one electron in the S sub shell.

i) What is the valency of the elements P and Q? 1

ii) What is the chemical formula of the compound formed of P and Q? 1

5 6.022×10^{25} molecules of a gaseous element weighs 6400g.

i) How many moles of the element is it? 1

ii) What is the mass of 1 mole of the element? 1

iii) What do you know about the molecular mass of the element? 1

6 Calculate the following in respect of the 140g of carbon monoxide (CO) gas kept at S.T.P

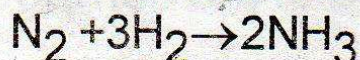
(Given that the molecular mass of CO = 28)

i) How many moles of CO is present in the given amount of CO gas? 1

- ii) Find the number of molecules of CO present in the given quantity of gas. 1
- iii) What will be the volume of this gas? 1
- 7 Match the items suitably by selecting the most related item from column 'B' and 'C'. So as to match against each item given column 'A' and then write the related items in the matched form. 3

A	B	C
d block	alkali metals	7 valence electrons
p block	avogadro number	0.5 mole of atoms
10 mole at STP	transition metals	2nd group metals
.....	chlorine	6.022×10^{24} molecules
.....	224 L	variable oxidation states

- 8 The following equation represents the reaction that occurs in the manufacture of Ammonia (NH_3).



After analysing the equation, answer the following questions.

- i) How many molecules of N_2 would combine with 15 molecules of H_2 ? 1
- ii) By that reaction, how many molecules of NH_3 will be formed? 1
- 9 Give the sub shell wise electron configuration.
- i) Of copper atom. 1
- ii) Of copper ion in CuCl_2 molecule. 1
- (Hint : Atomic number of copper = 29)