

## UNIT TEST - I

CLASS : XI  
SUBJECT : CHEMISTRY

TIME : 1.00 hr  
MARKS : 40

## PART-I

CHOOSE THE CORRECT ANSWER :

10 X 1 = 10

1. which of the following compound has same percentage of carbon as that of ethylene (C<sub>2</sub>H<sub>4</sub>) ?  
a) benzene      b) ethane      c) propene      d) ethyne
2. The oxidation number of carbon in CH<sub>2</sub>F<sub>2</sub> is \_\_\_\_\_  
a) +4      b) -4      c) 0      d) +2
3. The relative molecular mass of ethanol is \_\_\_\_  
a) 0.46g      b) 4.6 g      c) 460g      d) 46g
4. Which one of the following represents 180g of water ?  
a)  $\frac{6.022 \times 10^{24}}{180}$  moles of water      b) 5 moles of water  
c)  $6.022 \times 10^{24}$  moles of water      d) 90 moles of water
5. Total number of electrons present in 1.7 g of ammonia is :  
a)  $6.022 \times 10^{23}$       b)  $\frac{6.022 \times 10^{22}}{1.7}$       c)  $\frac{6.022 \times 10^{24}}{1.7}$       d)  $\frac{6.022 \times 10^{23}}{1.7}$
6. The number of water molecules in a drop of water weighing 0.018 g is  
a)  $6.022 \times 10^{26}$       b)  $6.022 \times 10^{23}$       c)  $6.022 \times 10^{20}$       d)  $9.9 \times 10^{22}$
7. Which one of the following is used as a standard for atomic mass.  
a)  ${}_6\text{C}^{12}$       b)  ${}_7\text{C}^{12}$       c)  ${}_6\text{C}^{13}$       d)  ${}_6\text{C}^{14}$
8. Carbon forms two oxides, namely carbon monoxide and carbon dioxide. The equivalent mass of which element remains constant?  
a) Carbon      b) oxygen  
c) both carbon and oxygen      d) neither carbon nor oxygen
9. When 6.3 g of sodium bicarbonate is added to 30 g of acetic acid solution, the residual solution is found to weigh 33 g. The number of moles of carbon dioxide released in the reaction is  
a) 3      b) 0.75      c) 0.075      d) 0.3



10.

The above reaction is

- a) combination reaction      b) decomposition reaction  
c) displacement reaction      d) auto redox reaction

**PART-II****ANSWER THE FOLLOWING ANY FOUR QUESTIONS.****4 X 2 = 8**

11. Define relative atomic mass
12. What is the empirical formula of the following ?
  - i) Fructose ( $C_6H_{12}O_6$ ) found in honey
  - ii) Caffeine ( $C_8H_{10}N_4O_2$ ) a substance found in tea and coffee.
13. What are auto redox reactions ? give an example
14. What do you understand by the term mole ?
15. Calculate the equivalent mass of  $H_2SO_4$
16. Define- Oxidation number

**PART-III****ANSWER THE FOLLOWING ANY FOUR QUESTIONS.****4 X 3 = 12****(COMPULSORY QUESTION NO : 22)**

17. Calculate the molar mass of the following compounds.
  - i) Urea [ $CO(NH_2)_2$ ]
  - ii) Boric acid [ $H_3BO_3$ ]
  - iii) Sulphuric acid [ $H_2SO_4$ ]
18. What is meant by limiting reagents ?
19. Define Gram equivalent mass
20. Distinguish between oxidation and reduction
21. Any three rules assigning the oxidation number
22. Find out the oxidation number of underlined elements for the following compounds
  - i)  $\underline{S}O_3^{2-}$
  - ii)  $H_2\underline{S}O_4$
  - iii)  $\underline{Cr}_2O_7^{2-}$

**PART-IV****ANSWER ALL THE QUESTIONS****2 X 5 = 10**

23. a) Calculate the empirical formula and molecular of a compound containing 76.6% carbon, 6.38% of hydrogen and rest oxygen. Its vapour density is 47 (5)  
(OR)
  - b) i) What is the difference between molecular mass and molar mass ? (3)
  - ii) Calculate the amount of water produced by the combustion of 32g of methane (2)
24. a) i) An organic compound present in vinegar has 40% carbon, 6.6% hydrogen and 53.4% oxygen. Find the empirical formula of the compound. (3)
  - ii) What is a combination reaction? Give an example (2)  
(OR)
  - b) i) Balance the following equations by oxidation number method. (2)
- $$K_2Cr_2O_7 + KI + H_2SO_4 \longrightarrow K_2SO_4 + Cr_2(SO_4)_3 + I_2 + H_2O$$
- ii) How many moles of ethane are required to produce 44g of  $CO_2(g)$  after combustion. (3)

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