INDIAN SCHOOL AL WADI AL KABIR

Unit test 2026-2027

CLASS XI CHEMISTRY MAX MARKS: 30

1.	(C) 0.2 $molL^{-1}$	1
2.	(D) 1 m	1
3.	(A) 12.044×10^{20} molecules	1
4.	(B) 27.27%	1
5.	(C) $C_6H_{12}O_6$	1
6.	D. Electrons move in specific energy levels or orbits.	1
7.	d. Assertion is wrong, but the reason is a correct statement	1
8.	(a). Assertion and reason both are correct statements, and reason is a correct explanation for the assertion.	1
9.	A. Oxygen of CO: Oxygen of CO2 = 1:2 B. 5.6 L of gas = 5.6/22.4 = 0.25 moles OR Moles of Cl2 = 0.2 moles = 0.2x71= 14.2 g Moles of HCl formed = 0.4 x 36.5=14.6g	1 1 1 1
10.	Could not explain the splitting of spectral lines in a magnetic field (Zeeman effect) and in an electric field (Stark effect) Could not explain the ability of atoms to form molecules using chemical bonds.	1 1
11.	Oxygen is the limiting reagent. 0.125 moles of Oxygen will give 0.25 moles of MgO = 10 g of MgO OR A. One mole contains 6.022×10^{23} particles. B. In 18 g of water molecules, there are $6.022x10^{23}$ water molecules = $6.022x10^{23}$ x2 = $12.044x10^{23}$ H atoms	1 1 1 1 2
12	$\nu = \frac{\Delta E}{h} = \frac{E_f - E_i}{h}$ A. ν – Bohr frequency, E_f - final energy level, E_i – initial energy level B. $2.18x10^{-18}$ [$1/4^2$- $1/2^2$] = $-0.408x10^{-18}$ J	1 2

<table>
<tr><td>13.</td><td>(i) $E_n = -\frac{(2.18 \times 10^{-18} J)Z^2}{n^2}$
= -19.62x 10^{-18} J
(ii) $r_n = \frac{(0.0529nm)n^2}{Z}$
= 17.6 x10^{-12} m</td><td>1</td></tr>
<tr><td>14</td><td>I. Mass of one Naphthalene molecule = 2.128×10^{-22} g
II. When gases combine or are produced in a chemical reaction, they do so in a simple integer ratio by volume, provided all gases are at the same temperature and pressure
III. 2 mol of C_2H_6 requires 7 mol of Oxygen = 156.8L of Oxygen
OR
(A) 1.79 x10^{-22} grams of Silver
(B) Molarity as the volume changes with temperature</td><td>1
1
1
1+1</td></tr>
<tr><td>15.</td><td>A. 1 mole of CO_2
B. Avogadro’s Law states that equal volumes of all gases, under the same conditions of temperature and pressure, contain an equal number of molecules.
C
<table><tr><td>C</td><td>40/12 = 3.33</td><td>3.33/3.33 =1</td></tr><tr><td>H</td><td>6.7/1=6.7</td><td>6.7/3.33=2</td></tr><tr><td>O</td><td>53.3/16=3.33</td><td>3.33/3.33=1</td></tr></table>Empirical formula = CH_2O
n= 60/30=2 Hence MF = $C_2H_4O_2$
D. The limiting reagent is the reactant that is completely consumed first in a chemical reaction.
OR
$\chi_{ethanol} = \frac{1\ \text{mol}}{2\ \text{mol}} = 0.5$
A.
B. 180 ml of H_2 required
C. molarity = no of moles/V In litres
0.5=n/0.25 = 0.125 moles</td><td>1
1
2
1
2
1
2</td></tr>
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