



INDIAN SCHOOL MUSCAT
FIRST PERIODIC ASSESSMENT

CHEMISTRY

CLASS: XI

Sub. Code: 043

Time Allotted: 50 mts.

12.11.2019

Max. Marks: 20

GENERAL INSTRUCTIONS:

- All questions are compulsory.
- Mark for each question is indicated against it.

1. 22 g of CO_2 has same number of molecules as in ----- 1
a) 16 g of CO b) 14 g of N_2 c) 2 g of H_2 d) 32 g of O_2
2. What type of intermolecular forces are existing between HCl and H_2O 1
a) Dipole-Dipole
b) Dipole-Induced dipole
c) Hydrogen bonding
d) London forces
3. _____ gives the simplest ratio of atoms of various elements present in one molecule of a compound . 1
4. The plot of temperature versus pressure at constant volume is called _____ 1
5. State Boyle's law. 1
6. Calculate 2
a) The volume of 66g of CO_2 at STP
b) The number of particles in 160 gm of Ca
(RAM C=12u, O=16 u, Ca=40 u)
7. Define the following: 2
a) Molar volume
b) Formula mass
8. a) In terms of Charles law explain why -273°C is the lowest temperature? 2
b) State Dalton's law of partial pressure.

9. a) Calculate the mass of CO_2 formed when 16 g of methane is burnt in 32 g of oxygen. 3
b) Calculate molarity of 49 % solution of H_2SO_4 having density 2.8 gml^{-1} . (RAM of $\text{H}=1 \text{ u}$, $\text{S}=32\text{u}$)
10. A compound contains 4.07 % hydrogen, 24.27 % carbon and 71.65 % chlorine. Its molar mass is 98.96 g. Deduce its empirical and molecular formula. 3
(RAM of $\text{H}=1 \text{ u}$, $\text{Cl}=35.5 \text{ u}$)
11. a) Calculate the temperature at which 28g of N_2 will occupy a volume of 10 L at 2.46 atm. 3
(RAM of $\text{N}=14 \text{ u}$, $R=0.0821 \text{ LatmK}^{-1} \text{ mol}^{-1}$)
b) At constant temperature if the pressure of a fixed mass of gas is doubled, what happens to its volume?

End of the Question Paper

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- 16 g of dioxygen has same number of molecules as in ----- 1
a) 16 g of CO b) 44 g of CO₂ c) 2 g of H₂ d) 14 g of N₂
- What type of intermolecular forces are existing between two F₂ molecules? 1
a) Dipole-Induced dipole
b) Hydrogen bonding
c) London forces
d) Dipole-Dipole
- _____ is the concentration term which does not change with change in temperature. 1
- The pressure exerted by water vapour in equilibrium with its liquid is called _____. 1
- State Charles law. 1
- Calculate 2
a) The volume of 12.044×10^{23} molecules of CO₂ at STP
b) The number of particles in 80 u of Ca. (RAM C=12u, O=16 u, Ca=40 u)
- Define the following: 2
a) Molar mass
b) Mass percent

8. a) Tyres of automobiles are inflated to lesser pressure in summer than in winter. Why? 2
b) Define absolute zero.
9. a) 12 g of Mg react with 4 g of O₂ to form Magnesium oxide. calculate the mass of MgO 3
formed. (RAM of Mg = 12u)
b) Calculate the mass of KOH dissolved in water to make a 2 L solution whose molarity is
0.5M . (RAM of K=39u)
10. a) A neon-dioxygen mixture contains 2.20 moles of dioxygen and 8.5 moles of neon. If 3
pressure of the mixture of gases in the cylinder is 25 bar. What is the partial pressure
neon in the mixture?
b) What will happen to the volume of a fixed mass of gas at a certain T and P if T is kept
constant but pressure is decreased to half of its original value?
11. An organic compound on analysis gave the percentage composition of carbon as 57.8%, 3
hydrogen as 3.6% and the rest oxygen. The molecular mass of the organic compound was
166g/mol. Calculate the empirical and molecular formula of the organic compound.

End of the Question Paper



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- 14 g of dinitrogen has same number of molecules as in _____ 1
a) 16g of O₂ b) 16 g of CO c) 2 g of H₂ d) 44 g of CO₂
- What type of intermolecular forces are existing between NH₃ and CO₂ molecules? 1
a) Dipole-Dipole
b) Dipole-Induced dipole
c) Hydrogen bonding
d) London forces
- Total Number of atoms present in one molecule of a substance is called _____. 1
- The lowest possible temperature at which gases occupy zero volume is called _____. 1
- State Avogadro's law. 1
- Calculate 2
a) The mass percent of Oxygen in one mole of CaCO₃
b) The number of particles in 1.8 g of C₆H₁₂O₆
(RAM C=12u, O=16 u, H=1u, Ca=40 u)
- a) Define the term parts per million. 2
b) State law of multiple proportion.
- a) The size of weather balloon becomes larger as it ascends into higher altitude why? 2
b) What is meant by aqueous tension?

9. a) What mass of SO_2 is produced when 16g of Sulphur is burnt in 20g of oxygen? 3
(RAM of S=32u)
- b) Calculate the molality of a solution containing 8 g of NaOH in 250g of water.(RAM of Na=23)
10. a) Calculate the volume occupied by 8.8 g of CO_2 at 31.1°C and 1 bar pressure. 3
($R=0.083\text{barLK}^{-1}\text{mol}^{-1}$)
- b) What will happen to the volume of a fixed mass of gas at a certain T and P if T is kept constant but pressure is decreased to $1/4^{\text{th}}$ of its original value?
11. An organic compound containing carbon, hydrogen and oxygen gave the following 3
composition C: 40.68%, H: 5.08%.and O:54.24%. The vapour density of the compound is 59. Calculate its molecular formula.

End of the Question Paper