DPP
DAILY PRACTICE PROBLEMS

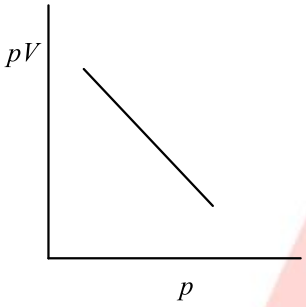
CLASS : XIth **SUBJECT : CHEMISTRY**
DATE : **DPP No. : 1**

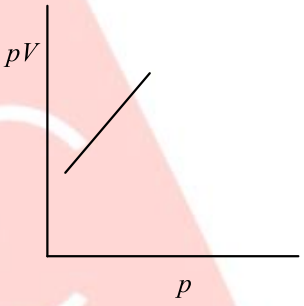
Topic :- STATES OF MATTER

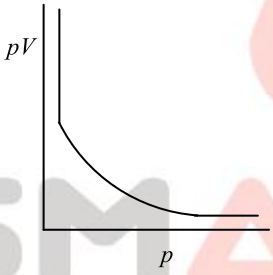
1. One atmosphere is numerically equal to approximately:
   a) 10^6 dyne cm^{-2} b) 10^2 dyne cm^{-2} c) 10^4 dyne cm^{-2} d) 10^8 dyne cm^{-2}

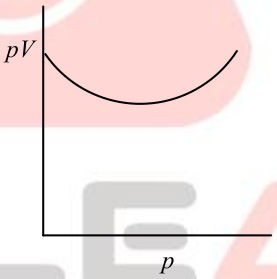
2. Calculate the total pressure in a 10.0 L cylinder which contains 0.4 g helium, 1.6 g oxygen and 1.4 g nitrogen at 27°C.
   a) 0.492 atm b) 49.2 atm c) 4.92 atm d) 0.0492 atm

3. Which of the following is a Boyle plot at very low pressure?

a)


b)


c)


d)


4. A flask filled with CCl_4 was weighed at a temperature and pressure. The flask was then filled with oxygen at the same temperature and pressure. The mass of CCl_4 vapour would be about:
   a) The same as that of the oxygen
   b) One-fifth as heavy as oxygen
   c) Five times as heavy as oxygen
   d) Twice as heavy as oxygen

5. In a face centred cubic cell, an atom at the face contributes to the unit cell
   a) 1 part b) $\frac{1}{2}$ part c) $\frac{1}{4}$ part d) $\frac{1}{8}$ part

6. Four rubber tubes are respectively filled with H_2, O_2, N_2 and He. The tube which will be reinflated first is:
   a) H_2 filled tube b) O_2 filled tube c) N_2 filled tube d) He filled tube

7. Schottky defect generally appears in
   a) KCl b) NaCl c) CsCl d) All of these

8. Calculate the ionic radius of a Cs^+ ion, assuming that the cell edge length for CsCl is 0.4123 nm and that the ionic radius of a CI^- ion is 0.181 nm
a) 0.352 nm b) 0.116 nm c) 0.231 nm d) 0.176 nm

9. The deuiation from the ideal gas behaviour of a gas can be expressed as
a) $Z = \frac{p}{VRT}$ b) $Z = \frac{pV}{nRT}$ c) $Z = \frac{nRT}{pV}$ d) $Z = \frac{VR}{pT}$

10. Positive deviation from ideal behaviour takes place because of
a) Molecular interaction between atom and $\frac{pV}{nRT} > 1$
b) Molecular interaction between atom and $\frac{pV}{nRT} < 1$
c) Finite size of atoms and $\frac{pV}{nRT} > 1$
d) Finite size of atoms and $\frac{pV}{nRT} < 1$

11. In an experiment during the analysis of a carbon compound, 145 mL of H_2 was collected at 760 mm Hg pressure and 27°C. The weight of H_2 is nearly :
a) 10 mg b) 12 mg c) 6 g d) 8 g

12. The pressure and temperature of $4dm^3$ of carbon dioxide gas are doubled, then the volume of carbon dioxide gas would be
a) 2 dm^3 b) 3 dm^3 c) 4 dm^3 d) 8 dm^3

13. Adiabatic demagnetisation is a technique used for:
a) Adiabatic expansion of a gas
b) Production of low temperature
c) Production of high temperature
d) None of the above

14. A real gas at high pressure occupies under identical conditions:
a) More volume than that of an ideal gas
b) Less volume than that of an ideal gas
c) Same volume as that of an ideal gas
d) More or less volume than that of an ideal gas depending upon the nature of the gas

15. Structure similar to zinc blende is found in
a) NaCl b) AgCl c) CuCl d) TlCl

16. One mole of a gas is defined as:
a) The number of molecules in one litre of gas
b) The number of molecules in 2.24 litre of a gas
c) The number of atoms contained in 12g of C^{14} isotope
d) The number of molecules in 22.4 litre of a gas at STP

17. The formula for determination of density of unit cell is

a) $\frac{a^3 \times N_A}{Z \times M}$ g cm^{-3} b) $\frac{M \times N_A}{A^3 \times Z}$ g cm^{-3} c) $\frac{Z \times M}{a^3 \times N_A}$ g cm^{-3} d) $\frac{a^3 \times M}{Z \times N_A}$ g cm^{-3}

18. The crystal system of a compound with unit cell dimensions, $a = 0.387, b = 0.387$ and $c = 0.504$ nm, and $\alpha = \beta = 90°$ and $\gamma = 120°$ is
a) Cubic b) Hexagonal c) Orthorhombic d) Rhombohedral

19. Air at sea level is dense, this is a practical implementation of
a) Boyle's law b) Charles' law c) Avogadro's law d) Dalton's law

20. During the evaporation of liquid
a) The temperature of the liquid will rise b) The temperature of the liquid will fall
c) May rise or fall depending on the nature d) The temperature remains unaffected