Chapter 3rd

GASES
MCQs

Q.1 The order of the rate of diffusion of gases NH3, SO2, Cl2 and CO2 is:

(a) NH3 > SO2 > Cl2 > CO2
(b) NH3 > CO2 > SO2 > Cl2

(c) Cl2> SO2 > CO2 > NH3
(d) None of these

Q.2 Pressure remaining constant at which temperature the volume of gas will become twice of what it is at 0C.

(a) 546 oC (b) 200 oC
(c) 546 K (d) 273 K

Q.3 Equal masses of methane and oxygen are mixed in an empty container at 25oC. The fraction of the total pressure exerted by the oxygen is:

(a) (b)
(c) (d)

Q.4 Which of the following of will have the same number of molecules at STP?

(a) 280 cm3 of CO2 and 280 cm3 of N2O
(b) 11.2 dm3 of O2 and 32 g of O2

(c) 44g of CO2 and 11.2 dm3 of CO
(d) 28g of N2 and 5.6 dm3 of oxygen

Q.5 Number of molecules in one dm3 of water is close to:
(a) x 1023 (b) x 1023
(c) x 1023 (d) 55.6 x 6.02 x 1023
Q.6 If absolute temperature of a gas is doubled and the pressure is reduced to one half the volume of gas
will.
(a) remain unchanged (b) increases four times
(c) reduce to (d) be double

Q.7 How should the conditions be changed to prevent the volume of a given mass of gas from expanding when its mass is increased
(a) temperature is lowered and pressure is increased
(b) temperature is increased and the pressure is lowered
(c) temperature and pressure both are lowered
(d) temperature and pressure both are increased

Q.8 The molar volume of CO2 is maximum at
(a) STP
(b) 127 oC and 1 atm
(c) 0 oC and 2 atm
(d) 273 oC and 2 atm

Q.9 Gases deviate from ideal behaviour at high pressure. Which of the following is correct for non–ideality?
(a) At high pressure, the gas molecules move in one direction only
(b) At high pressure, the collisions between, the gas molecules are increased manifold
(c) At high pressure, the volume of gas becomes insignificant
(d) AT high pressure, the intermolecular attractions, become significant

Q.10 The deviation of a gas from ideal behaviour is maximum at,
(a) – 10 oC and 5.0 atm (b) – 10 oC and 2.0 atm
(c) 100 oC and 2.0 atm (d) 0 oC and 2.0 atm

Q.11 At high temperature isotherm moves away from both the axis because of increase in,

(a) pressure (b) volume
(c) no. of moles (d) all above

Q.12 Values of Charle's law constant K depends upon.

(a) mass of gas (b) pressure gas
(c) no. of moles of gas (d) all above

Q.13 Equal volumes of H2 and He are inserted in the same vessel. The pressure exerted by H2 and He are in the ratio:

(a) 1:1 (b) 2:1
(c) 1:2 (d) all above

Q.14 Which of the following have same no. of molecules at STP

(a) 1000 cm3 of N2H4 and O2
(b) 200 cm3 of CO2 and N2O
(c) 50 cm3 each of CO and N2
(d) all above

Q.15 If absolute temperature is doubled and the pressure is increased 4 times. The volume is

(a) half (b) double
(c) four times (d) remains the changed

Q.16 Density of a gas is usually expressed in

(a) kg m3 (b) kg dm3
(c) g dm–3 (d) g cm–3

Q.17 Units of gas constant R in SI system is:

(a) 0.0821 dm3 atm k–1 mol–1
(b) 82.1 cm3 atm k–1
(c) 8.31 Nm k–1 mol–1
(d) 1.987 cal k–1 mol–1

Q.18 Concept of distribution of velocities among the gas molecules was developed by

(a) Claudius (b) Maxwell
(c) Boltzman (d) Vanderwaal

Q.19 Absolute temperature of gas is proportional to

(a) translational kinetic energy
(b) rotational kinetic energy
(c) vibrational kinetic energy
(d) potential energy

Q.20 Deviation a gas from ideal behaviour is maximum at
(a) low temperature, low pressure
(b) low temperature, high pressure
(c) high temperature, low pressure
(d) high temperature high pressure

Q.21 Most ideal gas at room temperature is:
(a) CO2 (b) NH3
(c) SO2 (d) N2

Q.22 22.414 dm3 of various ideal gases at STP will have Avogadro's number of molecules
(a) 6.02 x 1023 (b) 6.02 x 1024
(c) 0.602 x 1023 (d) 6.02 x 1022

Q.23 Gases are ideal at
(a) low pressure and high temperature
(b) low temperature and high pressure
(c) high pressure and high temperature
(d) low pressure and low temperature

Q.24 The value of compressibility factor for an ideal gas is equal to:
(a) 1 (b) 1.5
(c) 2 (d) 2.5

Q.25 An ideal gas obeys
(a) Boyle's law (b) Charle's law
(c) Avogadro's law (d) all above

Q.26 A real gas obeying Vander Waal's equation will resemble ideal gas if:
(a) both 'a' and 'b' are large
(b) both 'a' and 'b' are small
(c) 'a' is small and 'b' is large
(d) 'a' is large and 'b' is small

Q.27 Deep sea divers breath mixture of nitrogen and oxygen in a ratio of:

(a) 96% N2 and 4% O2 (b) 4% and N2 and 96% O2

(c) 80% N2 and 20% O2 (d) 20% N2 and 80% O2

Q.28 One mole of any gas at STP occupies volume

(a) 2.24 dm3 (b) 22.4 dm3

(c) 44.4 dm3 (d) 48.4 dm3

Q.29 K.E. of gas molecules is equal to:

(a) (b) m v2

(c) (d)

Q.30 All gases solidify before reaching at

(a) 373 oK (b) 273 oC

(c) – 473 oC (d) 0 oK

Q.31 Kinetic equation is equal to

(a) P V = n R T (b) P V = R T

(c) PV = m n c2 (d) PV = m n c2

Q.32 Root mean square velocity is equal to

(a) (b)

(c) (d)

Q.33 Kinetic energy associated with one molecule of a gas due to translational motion is given by

(a) EK = (b) Ek = m v2

(c) Ek = m n c2 (d) Ek =

Q.34 Density of gas is usually expressed as

(a) kg m–3 (b) kg dm–3

(c) g dm–3 (d) g cm–3

Q.35 Weight of one dm3 of O2 at STP is

(a) 1.4384 gm (b) 1.4394 gm

(c) 1.6384 gm (d) 1.3384 gm

ANSWERS

Question	1	2	3	4	5

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Answers	b	c	a	a	a
Questions	6	7	8	9	10
Answers	b	a	b	d	a
Questions	11	12	13	14	15
Answers	b	d	a	d	a
Questions	16	17	18	19	20
Answers	c	c	b	a	b
Questions	21	22	23	24	25
Answers	d	a	a	a	d
Questions	26	27	28	29	30
Answers	b	a	b	d	d
Questions	31	32	33	34	35
Answers	c	a	a	c	a