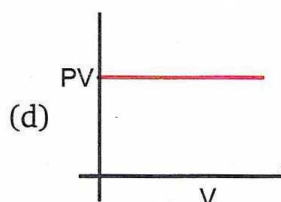
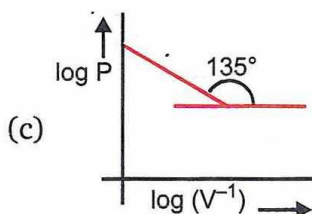
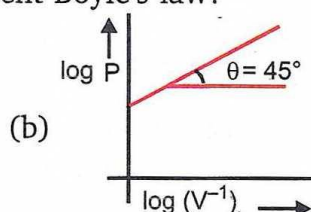
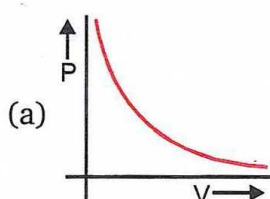


Assignment: Gaseous and Liquid state

1. Which one of the following statements is not correct about the three states of matter i.e., solid, liquid and gaseous ?
- Molecules of a solid possess least energy whereas those of a gas possess highest energy
 - The density of solids is highest whereas that of gases is lowest
 - Gases and liquids possess definite volumes
 - Molecules of a solids possess vibratory motion

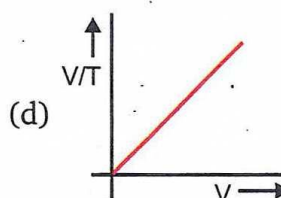
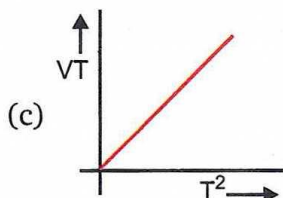
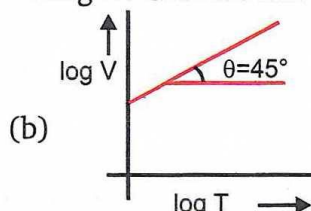
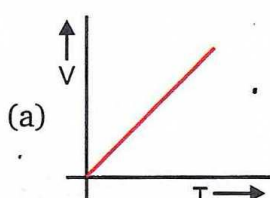
2. Which of the following curve does not represent Boyle's law?



3. A certain sample of gas has a volume of 0.2 litre measured at 1 atm pressure and 0°C. At the same pressure but at 273°C, its volume will be:

- 0.4 litre
- 0.8 litre
- 27.8 litres
- 55.6 litres

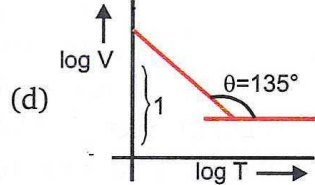
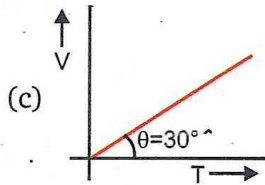
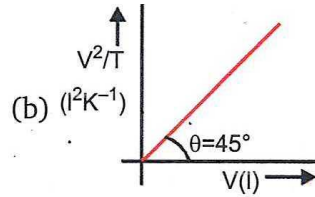
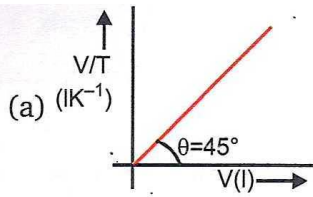
4. Among the following curves, which is not according to Charles's law ?



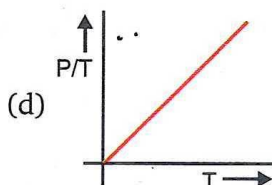
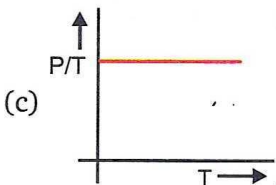
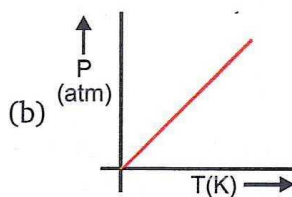
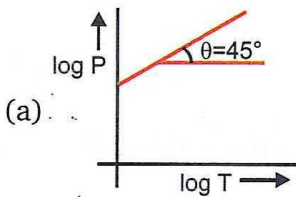
5. Initial temperature of an ideal gas is 75°C. At what temperature, the sample of neon gas would be heated to double its pressure, if the initial volume of gas is reduced by 15%?

- 319°C
- 592°C
- 128°C
- 60°C

6. Which is correct curve for Charles's law, when the curve is plotted at 0.821 atm pressure for 10 mole ideal gas?

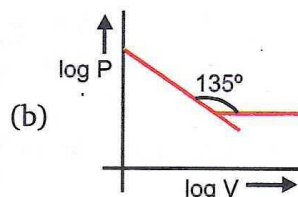
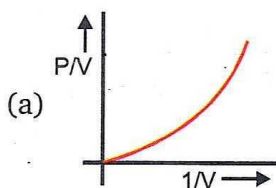


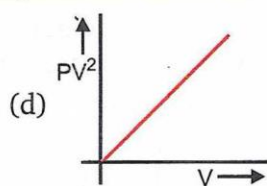
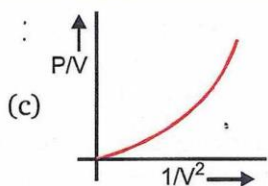
7. At constant volume, for a fixed number of moles of a gas, the pressure of the gas increases with increase in temperature due to:
- increase in the average molecular speed
 - decrease in rate of collision amongst molecules
 - increase in molecular attraction
 - decrease in mean free path
8. Which is not correct curve for Gay-lusacc's law ?



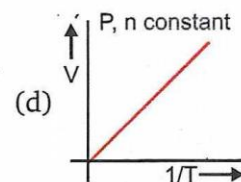
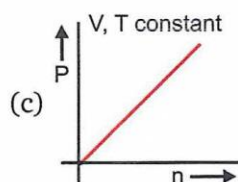
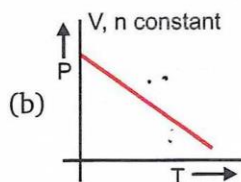
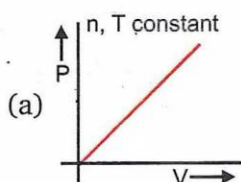
9. Three flasks of equal volumes contain CH_4 , CO_2 and Cl_2 gases respectively. They will contain equal number of molecules if :
- the mass of all the gases is same
 - the mass of all the gas is same but temperature is different
 - temperature and pressure of all the flasks are same
 - temperature, pressure and masses same in the flasks.

10. Which is **incorrect** curve for Boyle's law ?

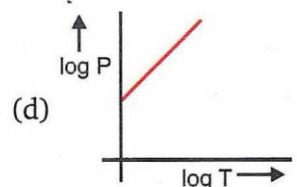
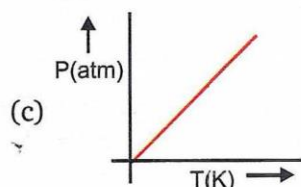
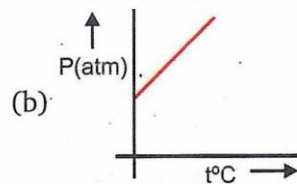
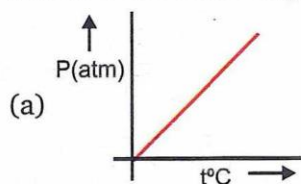


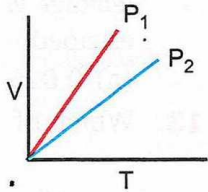


11. "Equal volumes of all gases at the same temperature and pressure contain equal number of particles." This statement is a direct consequence of :
- (a) Avogadro's law (b) Charle's law
(c) ideal gas equation (d) law of partial pressure
12. A 2.24L cylinder of oxygen at 1 atm and 273 K is found to develop a leakage. When the leakage was plugged the pressure dropped to 570 mm of Hg. The number of moles of gas that escaped will be :
- (a) 0.025 (b) 0.050 (c) 0.075 (d) 0.09
13. Which of the following curve is correct for an ideal gas ?



14. In the equation of state of an ideal gas $PV = nRT$, the value of the universal gas constant is not correct :
- (a) $8.314 \text{ JK}^{-1} \text{ mol}^{-1}$ (b) $0.0821 \text{ atm L mol}^{-1} \text{ K}^{-1}$
(c) $0.8314 \text{ bar L mol}^{-1} \text{ K}^{-1}$ (d) $2 \text{ cal mol}^{-1} \text{ K}^{-1}$
15. At 0°C and one atm pressure, a gas occupies 100 cc. If the pressure is increased to one and a half-time and temperature is increased by one-third of absolute temperature, then final volume of the gas will be:
- (a) 80 cc (b) 88.9 cc (c) 66.7 cc (d) 100 cc
16. 10 g of a gas at 1 atm and 273 K occupies 5 litres. The temperature at which the volume becomes double for the same mass of gas at the same pressure is:
- (a) 273 K (b) -273°C (c) 273°C (d) 546°C
17. Which of the following curve does not represent Gay-lusacc's law?



18. If densities of two gases are in the ratio 1 : 2 and their temperatures are in the ratio 2 : 1, then the ratio of their respective molar mass at certain pressure is:
 (a) 1 : 1 (b) 1 : 2 (c) 2 : 1 (d) 4 : 1
19. Two separate bulbs contain ideal gases A and B. The density of gas A is twice that of gas B. The molecular mass of A is half that of gas B. The two gases are at the same temperature. The ratio of the pressure of A to that of gas B is :
 (a) 2 (b) 1/2 (c) 4 (d) 1/4
20. Volume of the air that will be expelled from a vessel of 300 cm^3 when it is heated from 27°C to 37°C at the constant pressure will be:
 (a) 310 cm^3 (b) 290 cm^3 (c) 10 cm^3 (d) 37 cm^3
21. V versus T curves at constant pressure P_1 and P_2 for an ideal gas are shown in fig. Which is correct?
 (a) $P_1 > P_2$ (b) $P_1 < P_2$
 (c) $P_1 = P_2$ (d) All of these
- 
22. Two flasks A and B of 500 mL each are respectively filled with O_2 and SO_2 at 300 K and 1 atm. pressure. The flasks will contain:
 (a) the same number of atoms
 (b) the same number of molecules
 (c) more number of moles of molecules in flask A as compared to flask B
 (d) the same amount of gases
23. 2.8 g of a gas at 1atm and 273K occupies a volume of 2.24 litres. The gas can not be:
 (a) O_2 (b) CO (c) N_2 (d) C_2H_4
24. Five grams each of the following gases at 87°C and 750 mm pressure are taken. Which of them will have the least volume ?
 (a) HF (b) HCl (c) HBr (d) HI
25. At what pressure a quantity of gas will occupy a volume of 60 mL, if it occupies a volume of 100 mL at a pressure of 720 mm (while temperature is constant) :
 (a) 700 mm (b) 800 mm (c) 100 mm (d) 1200 mm