Time: 30 min   **Ch#5 : States of Matter -03**   **Full Marks: 20**

Instructions:

1. All questions are compulsory.

2. Please give the explanation for the answer where applicable.

Q1 - Write the van der Waal equation for real gases.

(1 Mark)

Q2 - What type of graph will you get when PV is plotted against P at constant temperature?

(1 Mark)

Q3 - What is the S.I. unit of viscosity coefficient?

(1 Mark)

Q4 - What is the difference between normal boiling point and standard boiling point?

(2 Marks)

Q5 - Define-

(a)Critical temperature

(b)Critical pressure

(2 Marks)

Q6 - Why falling liquid drops are spherical?

(2 Marks)

Q7 - What is the significance of van der Waals parameters?

(2 Marks)

Q8 - A 2-L flask contains 1.6g of methane and 0.5g of hydrogen at 27^0 C. Calculate the partial pressure of each gas in the mixture and the total pressure.

(3 Marks)

Q9 - A sealed tube which can withstand a pressure of 3 atmosphere is filled with air at 27^0C and 760 mm pressure. Find the temperature above which it will burst.

(3 Marks)

Q10 - Calculate the pressure exerted by 1 mol of CO_2 at 273 K if the van der Waal's constant 'a'= 3.592 dm^6atm mol-. Assume that the volume occupied by CO_2 molecules is negligible.

(3 Marks)