ARJUNA (NEET)

STATES OF MATTER

DPP-08

1. At critical temperature, pressure and volume. The compressibility factor (Z) is
(A) $8/3$ (B) $5/3$
(C) $3/5$ (D) $3/8$

2. The liquefaction behavior of temporary gases like CO_2 approaches that of N_2, O_2 (permanent gases) as we go,
(A) Below absolute zero
(B) Above absolute zero
(C) Above critical temperature
(D) Below critical temperature

3. The value of van der Waal's constant 'a' for gases O_2, N_2, NH_3 and CH_4 are x, y, z and c respectively, where z > c > y > x. The gas which can most easily be liquefied, is
(A) O_2 (B) N_2
(C) NH_3 (D) CH_4

4. Which of the following is correct?
(A) For H_2 and He, z < 1 and molar volume at STP is less than 22.4 L
(B) For H_2 and He, z < 1 and molar volume at STP is greater than 22.4 L
(C) For H_2 and He, z > 1 and molar volume at STP is less than 22.4 L
(D) For H_2 and He, z > 1 and molar volume at STP is greater than 22.4 L

5. Which of the following is correct?
(A) A real gas approaches ideal gas behavior at low pressure and high temperature
(B) Liquification of a real gas is possible at low temperature and high pressure
(C) Both of them
(D) None of them

6. A real gas has critical temperature and critical pressure as 40ºC and 10 atm respectively, then liquification of gas is possible at
(A) 50°C and 8 atm
(B) 45°C and 8 atm
(C) 25° C and 12 atm
(D) 45°C and 12 atm

7. The ratio of Boyle's temperature and critical temperature for a gas is
(A) $\frac{8}{27}$ (B) $\frac{27}{8}$
(C) $\frac{1}{2}$ (D) $\frac{2}{1}$

8. van der Waal's equation at high pressure for 1 mole is
(A) $PV + \frac{a}{V} = RT$
(B) $PV = RT$
(C) $P(V + b) = RT$
(D) $P(V - b) = RT$

9. The excluded volume of molecule in motion is ____times, the actual volume of a molecule in rest
(A) 2 (B) 4
(C) 3 (D) 0.5

10. The inversion temperature for gas is given by
(A) $\frac{a}{Rb}$ (B) $\frac{2a}{Rb}$
(C) $\frac{Rb}{a}$ (D) $\frac{2Rb}{a}$

ANSWERS

1. (D)
2. (C)
3. (C)
4. (D)
5. (C)
6. (C)
7. (B)
8. (D)
9. (B)
10. (B)

Note - If you have any query/issue

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