Unit–4

Real Gas Models and Perfect Gas Mixtures

1. Real gases differ from ideal gases because of:
A) Molecular attraction and volume
B) Zero pressure
C) Constant density
D) Zero temperature
Answer: A) Molecular attraction and volume

2. The equation used for real gas behavior is:
A) Newton's equation
B) Van der Waals equation
C) Fourier equation
D) Bernoulli equation
Answer: B) Van der Waals equation

3. Compressibility factor is represented by:
A) R
B) Z
C) H
D) S
Answer: B) Z

4. For an ideal gas, compressibility factor (Z) equals:
A) 0
B) 1
C) 2
D) Infinite
Answer: B) 1

5. The critical point is the condition where:
A) Liquid and vapor become identical
B) Pressure becomes zero
C) Temperature becomes zero

D) Gas becomes solid
Answer: A) Liquid and vapor become identical

6. Perfect gas mixtures obey:
A) Dalton's law of partial pressures
B) Newton's law
C) Hooke's law
D) Fourier law
Answer: A) Dalton's law of partial pressures

7. Partial pressure means:
A) Total pressure
B) Pressure exerted by one gas in mixture
C) Atmospheric pressure
D) Vacuum pressure
Answer: B) Pressure exerted by one gas in mixture

8. The total pressure of gas mixture equals:
A) Product of pressures
B) Sum of partial pressures
C) Difference of pressures
D) Average pressure
Answer: B) Sum of partial pressures

9. Gas mixtures follow which relation?
A) Amagat's law
B) Pascal law
C) Hooke law
D) Ohm's law
Answer: A) Amagat's law

10. A real gas behaves approximately like an ideal gas at:
A) High pressure and low temperature
B) Low pressure and high temperature
C) Constant pressure

D) Low volume
Answer: B) Low pressure and high temperature

Part B: Fill in the Blanks

1. Gases that do not obey ideal gas law exactly are called _____ gases.
Answer: real

2. The compressibility factor is denoted by _____.
Answer: Z

3. The equation commonly used for real gases is _____ equation.
Answer: Van der Waals

4. For ideal gas, compressibility factor is equal to _____.
Answer: 1

5. The pressure exerted by individual gas in a mixture is called _____ pressure.
Answer: partial

6. The total pressure of gas mixture equals the _____ of partial pressures.
Answer: sum

7. Perfect gas mixtures obey _____ law.
Answer: Dalton's

8. The point at which liquid and vapor phases become identical is called _____ point.
Answer: critical

9. Real gases behave nearly as ideal gases at _____ pressure.
Answer: low

10. The constant used in gas equations is represented by _____.
Answer: R