The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

1) The relative mean speed ($C_{rel}$) and the average speed ($C_{avg}$) of a gas molecule are related to each other as-

(a) $C_{rel} = C_{avg}$
(b) $C_{rel} = 2C_{avg}$
(c) $C_{rel} = 2^{1/2}C_{avg}$
(d) $C_{rel} = 3^{1/2}C_{avg}$

No, the answer is incorrect.
Score: 0
Accepted Answers:
(c)

2) At a given volume, the collision frequency of gas molecules will

(a) Increases with increase in temperature
(b) Decreases with increase in temperature
(c) Increases with decrease in temperature
(d) Independent of temperature

No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) Increases with increase in temperature
d) Independent of pressure

No, the answer is incorrect.
Score: 0
Accepted Answers:
a) Decreased by half

4) The collision flux \( \langle Z_w \rangle \) is

- a) Directly proportional to mass and temperature
- b) Directly proportional to square root of mass and square root of temperature
- c) Inversely proportional to mass and temperature
- d) Inversely proportional to square root of mass and square root of temperature

No, the answer is incorrect.
Score: 0
Accepted Answers:
d) Inversely proportional to square root of mass and square root of temperature

5) The ratio of rates of effusion of \( \text{H}_2 \) and \( \text{CO}_2 \) through a fine pinhole is

- a) 1:0.2
- b) 4.7:1
- c) 9.4:1
- d) 2.35:1

No, the answer is incorrect.
Score: 0
Accepted Answers:
b) 4.7:1

6) The S.I unit of Diffusion constant (D) is

- a) \( \text{m}^2 \text{s}^{-1} \)
- b) \( \text{cm}^2 \text{s}^{-1} \)
- c) \( \text{m}^3 \text{s}^{-1} \)
- d) \( \text{m}^{-1} \text{s}^{-1} \)

No, the answer is incorrect.
Score: 0
Accepted Answers:
a) \( \text{m}^2 \text{s}^{-1} \)

7) The flux of the energy (J) is given by the equation: 

\[
J = -\kappa dT/dZ
\]

Where \( dT/dZ \) is the temperature gradient and \( \kappa \) is the proportionality constant known as

- (a) Thermal conductivity coefficient
- (b) Diffusion coefficient
- (c) Viscosity coefficient
- (b) Van't Hoff factor

No, the answer is incorrect.
8) Fick's first law of diffusion is given by (J=Flux of matter, \( \frac{dc}{dx}=\)Concentration gradient)  

- a) \( J=\frac{dc}{dx} \)
- b) \( J \propto \frac{dc}{dx} \)
- c) \( J = \left( \frac{dc}{dx} \right)T \)
- d) \( J = \frac{1}{\frac{dc}{dx}} \)

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b) \( J \propto \frac{dc}{dx} \)

9) The unit of viscosity is  

- a) Pascal
- b) Pascal-second
- c) Pascal second-1
- d) Pascal-1 second-1

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b) Pascal-second

10) The transported quantity associated with Viscosity is  

- a) Matter
- b) Energy
- c) Linear momentum
- d) Angular momentum

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c) Linear momentum