

X

NPTEL

reviewer4@nptel.iitm.ac.in ▼

Courses » Molecules in Motion

Announcements **Course** Ask a Question Progress Mentor FAQ

Unit 4 - Week 3 :

Course outline

How to access the portal

Week 1 :

Week 2 :

Week 3 :

Lecture 11 :
Transport properties

Lecture 12 :
Transport properties (Contd.)

Lecture 13 :
Transport properties of gases

Lecture 14 :
Molecular motion in Liquids

Lecture 15 :
Molecular motion in Liquids (Contd.)

Quiz : Week 3 :
Assignment 3

Lecture Material

Feedback for Week 3

Week 3 : Assignment 3

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2018-09-05, 23:59 IST.**

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

- (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) $C_{rel} = 2^{1/2} C_{avg}$

2) At a given volume, the collision frequency of gas molecules will **1 point**

- (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

© 2014 NPTEL - Privacy & Terms - Honor Code - FAQs -



A project of



NPTEL

National Programme on
Technology Enhanced Learning

In association with

NASSCOM®

Funded by

Week 7

Week 8

Download
VideosAssignment
SolutionInteractive
Session with
Students
 d) Independent of pressure

No, the answer is incorrect.

Score: 0

Accepted Answers:

a) Decreased by half

4) The collision flux (Z_w) is

1 point

- 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 H_2 and CO_2 through a fine pinhole is

1 point

- 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

1 point

- a) $m^2 s^{-1}$
- b) $cm^2 s^{-1}$
- c) $m^3 s^{-1}$
- d) $m^{-1} s^{-1}$

No, the answer is incorrect.

Score: 0

Accepted Answers:

a) $m^2 s^{-1}$ 7) The flux of the energy (J) is given by the equation: $J = -\kappa dT/dZ$ Where dT/dZ is temperature gradient and κ is the proportionality constant known as

1 point

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

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a) Thermal conductivity coefficient

8) Fick's first law of diffusion is given by (J =Flux of matter, dc/dx =Concentration gradient) **1 point**

a) $J=(dc/dx)$

b) $J \propto (dc/dx)$

c) $J = (\frac{dc}{dx})T$

d) $J = 1/(\frac{dc}{dx})$

No, the answer is incorrect.

Score: 0

Accepted Answers:

b) $J \propto (dc/dx)$

9) The unit of viscosity is **1 point**

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 **1 point**

a) Matter

b) Energy

c) Linear momentum

d) Angular momentum

No, the answer is incorrect.

Score: 0

Accepted Answers:

c) Linear momentum

Previous Page

End

