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Courses » Molecules in Motion Announcements **Course** Ask a Question Progress Mentor FAQ

Unit 5 - Week 4 :

Course outline

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Week 4 :

Lecture 16 :
Molecular motion in Liquids (Contd.)

Lecture 17 :
Molecular motion in Liquids (Contd.)

Lecture 18 :
Molecular motion in Liquids (Contd.)

Lecture 19 :
Molecular motion in Liquids (Contd.)

Lecture 20 :
Molecular motion in Liquids (Contd.)

Feedback for Week 4

Lecture Material

Quiz : Week 4 Assignment

Week 5

Week 6

Week 4 Assignment

The due date for submitting this assignment has passed. **Due on 2018-09-12, 23:59 IST.**
As per our records you have not submitted this assignment.

1) The _____ gas molecules diffuse more _____ because of _____ diffusion **1 point**
coefficient.

- (a) Small; Faster; Higher
 (b) Large; Faster; Higher
 (c) Small; Slower; Lower
 (d) Large; slower; Lower

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a) Small; Faster; Higher

2) **1 point**

The expression of thermal conductivity (κ) of a perfect gas, A, with molar concentration of [A], molar heat capacity at constant volume ($C_{v,m}$), Mean free path (λ) and Average speed of c , is given as-

- (a) $\kappa = \frac{1}{3} \lambda c C_{v,m} [A]$
 (b) $\kappa = \lambda c C_{v,m} [A]$
 (c) $\kappa = \frac{1}{5} \lambda c C_{v,m} [A]$
 (d) $\kappa = 3 \lambda c C_{v,m} [A]$

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a) $\kappa = \frac{1}{3} \lambda c C_{v,m} [A]$

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No, the answer is incorrect.

Score: 0

Accepted Answers:

b) Increases with increase in temperature

4) Ohm's Law states that

1 point

a) Conductivity (κ) remains constant with change in electric field (E)

b) Conductivity (κ) increases with increase in electric field (E)

c) Conductivity (κ) decreases with decrease in electric field (E)

d) Conductivity (κ) decreases with decrease in electric field (E)

No, the answer is incorrect.

Score: 0

Accepted Answers:

a) Conductivity (κ) remains constant with change in electric field (E)

5) Semiconductors and Insulators do not obey Ohm's Law because their

1 point

a) Conductivity decreases with increasing applied potential difference

b) Conductivity increases with increasing applied potential difference

c) Conductivity increases with decreasing applied potential difference

d) Conductivity is independent of applied potential difference

No, the answer is incorrect.

Score: 0

Accepted Answers:

b) Conductivity increases with increasing applied potential difference

6) For a given electrolyte solution at room temperature, the

1 point

Specific conductance is k and the resistance of the solution in a given conductivity cell is found to be R . The cell constant (C) is-

a) $C = \kappa R$

b) $C = \kappa / R$

c) $C = R / \kappa$

d) $C = 2\kappa R$

No, the answer is incorrect.

Score: 0

Accepted Answers:

a) $C = \kappa R$

7) The molar conductance of an electrolyte _____ with _____ in concentration.

1 point

(a) Increases; Decrease

(b) Increases; Increase

(c) Remains unchanged; Decrease

(b) Remains unchanged; increase

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a) Increases; Decrease

8)

1 point

According to Kohlrausch's law, the molar conductivity (Λ_m) of a strong electrolyte varies with concentration, c as-

- a) At low concentration, $\Lambda_m \propto c$
- b) At high concentration, $\Lambda_m \propto 1/c$
- c) At low concentration, $\Lambda_m \propto \sqrt{c}$
- d) At high concentration, $\Lambda_m \propto 1/\sqrt{c}$

No, the answer is incorrect.

Score: 0

Accepted Answers:

c) At low concentration, $\Lambda_m \propto \sqrt{c}$

9) For a given electrolyte having volume of V , the Specific conductance is κ and the Equivalent conductance is λ then- 1 point

- a) $l = \kappa V$
- b) $l = \kappa / V$
- c) $l = 1 / \kappa V$
- d) $l = V / \kappa$

No, the answer is incorrect.

Score: 0

Accepted Answers:

a) $l = \kappa V$

10)

1 point

According to the Law of Independent Migration of ions, the molar conductance (λ_m°) of MgCl_2 solution at limiting condition in terms of molar ionic conductance will be given as-

- a) $\lambda_{+}^\circ + \lambda_{-}^\circ$
- b) $\lambda_{+}^\circ + 2\lambda_{-}^\circ$
- c) $2\lambda_{+}^\circ + \lambda_{-}^\circ$
- d) $2\lambda_{+}^\circ \lambda_{-}^\circ$

- a)
- b)
- c)
- d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

b)

