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reviewer4@nptel.iitm.ac.in ▼

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Unit 6 - Week 5

Course outline

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Molecular motion in
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Week 5 Assignment 5

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

Due on 2018-09-12, 23:59 IST.

1) Ostwald dilution law is applicable for 1 point

- (a) Strong electrolytes
- (b) All bases
- (c) Weak electrolytes
- (d) All acids

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

No, the answer is incorrect.

Score: 0

Accepted Answers:

c)

2) A Bronsted acid is a _____ and a Bronsted base is a _____. 1 point

- (a) Proton acceptor; Proton donor
- (b) Proton donor; Proton acceptor
- (c) Electron donor; Electron acceptor
- (d) Proton donor; Electron acceptor

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

No, the answer is incorrect.

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Molar conductance of NaCl, HCl and C_2H_5COONa at infinite dilution are x , y and z respectively. The molar conductance of C_2H_5COOH at infinite dilution is-

- a) $z + y + x$
- b) $z + y - x$
- c) $z - y + x$
- d) $z - y - x$

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

No, the answer is incorrect.

Score: 0

Accepted Answers:

b)

4)

1 point

The degree of dissociation (α) of c (M) CH_3COOH solution having specific conductance κ and molar conductance at infinite dilution, Λ is-

- a) $1000\kappa/\Lambda c$
- b) $\kappa/\Lambda c$
- c) $1000\kappa\Lambda c$
- d) $1000\kappa c/\Lambda$

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

No, the answer is incorrect.

Score: 0

Accepted Answers:

a)

5)

1 point

The Ionic mobilities of the cations H^+ , Na^+ , K^+ follow the order as

- a) $Na^+ > K^+ > H^+$
- b) $K^+ > H^+ > Na^+$
- c) $H^+ > Na^+ > K^+$
- d) $H^+ > K^+ > Na^+$

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

No, the answer is incorrect.

Score: 0

Accepted Answers:

d)

6)

1 point

Molar conductivity (Λ_m) and ionic mobility (u) are related as-

a) $\Lambda_m \propto u$

b) $\Lambda_m \propto 1/u$

c) $\Lambda_m \propto u^2$

d) $\Lambda_m \propto 1/u^2$

 a) b) c) d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

a)

7)

1 point

When a sphere of radius, a having speed, s , is moving through a fluid of viscosity η , then viscous drag will be:

(a) $6\pi a\eta s$

(b) $6a\eta s$

(c) $\pi a\eta s/6$

(b) $6\pi a\eta s^2$

 a) b) c) d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

a)

8)

1 point

The terminal speed (s) of an ion having Ionic mobility, u , moving in an electric field (E) is-

a) uE

b) u/E

c) E/u

d) $2uE$

 a) b) c)

d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

a)

9) The intercept of the plot $1/\Lambda_m$ vs. $\Lambda_m c$ is-

1 point

a) Λ_m°

b) $c\Lambda_m^\circ$

c) $1/c\Lambda_m^\circ$

d) $1/\Lambda_m^\circ$

a)

b)

c)

d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

d)

10)

1 point

The difference between the molar ionic conductivities at infinite dilution of different anions-

a) Depends on the charge of the cationic counterpart

b) Is constant irrespective of their cationic counterpart

c) Depends of the ionic radius of the anions

d) Depends on the mobility of their cationic counterpart

a)

b)

c)

d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

b)

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