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**Max Time : 1 hr** **Class : 12th Chemistry Max Marks : 30**

**Unit Test**

1. = 0.76 V, the value of will be \_\_\_\_\_\_\_\_\_\_\_\_. **[ 1 ]**
2. = 0.74 V and = 0.40 V, the value of = \_\_\_\_\_\_\_\_\_\_\_\_. **[ 1 ]**
3. The unit of cell constant are \_\_\_\_\_\_\_\_\_\_\_\_\_. **[ 1 ]**
4. In a multiple step reaction, the \_\_\_\_\_\_\_\_\_\_\_ step determines the arte of reaction. **[ 1 ]**
5. Molecularity of first order reaction is neither negative nor \_\_\_\_\_\_\_\_\_. **[ 1 ]**
6. All natural and artificial radioactive decay is an example of \_\_\_\_\_\_\_\_\_\_\_\_ order reaction. **[ 1 ]**
7. Catalyst speeds up the reaction by decreasing the \_\_\_\_\_\_\_\_\_\_\_\_ energy of reaction. **[ 1 ]**
8. Give an example of a secondary cell. **[ 1 ]**
9. What is primary cell? Give an example. **[ 1 ]**
10. Write the rate equation for the reaction 2 A + B C, if the order of the reaction is zero. **[ 1 ]**
11. Specific conductivity of a 0.12 normal solution of an electrolyte is 0.024 ohm – 1 cm – 1 . Determine its equivalent conductivity. **[ 2 ]**
12. After 24 hours, only 0.125 g out of the initial quantity of 1 g of a radioactive isotope remains behind. What is its half-life period? **[ 2 ]**
13. Define Threshold Energy and Activation energy. **[ 2 ]**
14. Calculate the degree of dissociation () of acetic acid if its molar conductivity () is 39.05 S cm2 mol – 1 . [Given : (S cm2 mol – 1 ) : H+ = 349.6 S cm2 mol – 1  , CH3COO –  = 40.9 S cm2 mol – 1] **[ 2 ]**
15. The EMF of the following cell is found to be 0.2 V at 298 K : Cd | Cd2+ (?) || Ni2+ (2 M) | Ni . What is the molar concentration of Cd2+ ions in this solution? = 0.40 volt , = 0.25 V. **[ 3 ]**
16. For the reaction ; A + B Products, the following initial rates were obtained at various given initial concentrations : **[ 3 ]**

|  |  |  |  |
| --- | --- | --- | --- |
| S. No. | [A] mol/L | [B] mol/L | Initial rate M/s |
| 1 | 0.1 | 0.1 | 0.05 |
| 2 | 0.2 | 0.1 | 0.10 |
| 3 | 0.2 | 0.2 | 0.05 |

Determine the half life period

1. A first order reaction takes 20 minutes for 25 % decomposition. Calculate the time when 75 % decomposition of the reaction will be completed. **[ 3 ]**
2. At 27 in the presence of a catalyst, the activation energy of a reaction is lowered by 2 Kcal. Calculate by how much the rate of reaction will increase? **[ 3 ]**

Or

Write the factors on which rate of reaction depends.