**I.P.S.Sr.Sec.School**

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

**Unit Test**

1. Multiple choice questions : [ 1 X 6 = 6 ]
2. The standard electrode potential for Sn4+ /Sn2+ couple is + 0.15 V and that for the Cr3+/Cr couple is – 0.74 V. The two couple in their standard state are connected to make cell. The cell potential will be:

|  |  |  |  |
| --- | --- | --- | --- |
| a) + 1.19 V | b) 0.89 V | c) + 0.18 V | d) + 1.83 V |

1. Using the data given below and find out the strongest reducing agent.

= 1.33 V = 1.36 V = 1.51 V , = - 0.74 V

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cl – | b) Cr | c) Cr3+ | d) Mn2+ |

1. Using data given above, Find out the option for the order of reducing power is correct.

|  |  |
| --- | --- |
| a) Cr3+ < Cl – < Mn2+ < Cr | b) Mn2+ < Cl – < Cr3+ < Cr |
| c) Cr3+ < Cl – < Cr2 < | d) Mn2+ < Cr3+ < Cl – < Cr |

1. Using data given above, find out the most stable oxidized species.

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cr3+ | b) | c) Cr2 | d) Mn2+ |

1. Number of chiral carbon atoms in D (+) glucose is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 5 | b) 6 | c) 3 | d) 4 |

1. D (+) glucose and D (+) glucose are

|  |  |  |  |
| --- | --- | --- | --- |
| a) Anomers | b) Epimers | c) Enantiomers | d) Geometrical isomers |

1. What is Primary cell? Give an example. [ 1 ]
2. Write the name of the electrode used in (i) Fuel cell (ii) Mercury cell [ 1 ]
3. What is cathodic protection? [ 1 ]
4. Why are carbohydrates generally optically active? [ 1 ]
5. Draw the Haworth structure of – D – Glucopyranose. [ 1 ]
6. Define Limiting Molar conductivity. [ 2 ]
7. Write 3 factors affecting Electrolytic conductance. [ 2 ]
8. Calculate the standard electrode potential of the Ni2+/Ni electrode if the cell potential of the cell

Ni | Ni2+ (0.01 M) || Cu2+ (0.1 M) | Cu is 0.59 V. Given : = 0.34 volt [ 3 ]

1. Calculate the equilibrium constant for the reaction at 298 K [ 3 ]

4 Br –  + O2 + 4 H+ 2 Br2 + 2 H2O Given that : = 0.16 V

1. Calculate the cell emf at 25˚C for the cell : Mg (s) | Mg2+ (0.01 M) || Sn2+ (0.1 M) | Sn (s).

= 2.34 volt , = 0.136 volt

Calculate the maximum work that can be accomplished by the operation of this cell. [ 3 ]

1. What happens when D – glucose is treated with the following reagents ? [ 3 ]

(i) HI (ii) bromine water (iii) HNO3

1. Explain Epimers with examples? [ 3 ]