**KLS Gogte Institute of Technology (Autonomous)**

**Department of Chemistry**

Subject : Applied Chemistry Code : 16CHE22

Internal Assessment Test – Special (1)

Semester : II Div : **A, B, C, D, E, F and G** Date : 17/04/2018

Max. Marks : 25 Duration: 1 Hr

**Instructions**: Answer all the five questions compulsorily. **(5 x 5 = 25 marks)**

1. What are ion selective electrodes? Explain the construction and working of glass electrode. [L2], [CLO1], [PO 1, 3,7]
2. Explain the construction and working of Ni-MH battery with neat labeled diagram. [L2], [CLO1], [PO 1, 3,7]
3. Which of the following cell gives maximum voltage at 298 K? Justify your answer.

Zn/ZnSO4(2M)//CuSO4(1M)/Cu with E0cell1.10 V

Zn/ZnSO4(2M)//AgNO3(1M)/Ag with E0cell 1.56 V [L4], [CLO1], [PO 1, 3,7]

1. Identify and explain the type of corrosion with reactions occurring in caustic embrittlement of High pressure boiler. [L3], [CLO2], [PO1, 2, 3]
2. Explain the two cathodic protection methods of corrosion control with a neat labeled diagram. [L2], [CLO2], [PO1, 2, 3]

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Max. Marks : 05 Duration: 15 Min

1. An example for reference electrode is,

a) Zn/Zn2+ b) Hg/Hg2Cl2/Cl- c) Pt/Fe3+, Fe2+ d) Glass electrode

1. Li-ion battery is a

a) Primary battery b) Secondary battery c) Reserve battery d) None

1. Electrolyte used in Ni-MH battery is

a) Aq.H2SO4 b) Aq. KCl c) NaCl d) Aq.KOH

1. A group of solar panels arranged in series and in parallel are called

a) Solar cells b) Modules c) dry cells d) Arrays

1. Lithium metal is preferred as a battery anode material because of its

a) Light weight b) Low electrode potential c) Good conductivity d) All of these

1. In which of the following batteries the cell reaction is irreversible

a) Primary battery b)Secondary Battery c) Reserve battery d) Tertiary battery

1. Pitting corrosion is an example of \_\_\_\_\_\_\_\_\_\_type of corrosion.

a) Differential metal b) Differential aeration c) Stress d) None

1. Steel screws in brass hardware is an example of \_\_\_\_\_\_\_\_\_\_\_\_corrosion

a) Differential aeration b) Differential metal c) Pitting d) stress

1. Coating of tin on base metal by hot dipping process is known as

a) Galvanizing b) Tinning c) Anodizing d) Phosphating

1. Which of the following is an energy storage device

a) Li-ion cell b) Ni-MH cell c) Polymer electrolyte membrane fuel cell d) Both a & b

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