

Model Question Paper
Electro Chemistry I - Part III
12th Standard

Chemistry

Reg.No. :

--	--	--	--	--	--

I. Answer all the questions.

II. Use blue pen only.

III. Question number 18 is compulsory.

Time : 01:30:00 Hrs

Total Marks : 70

5 x 1 = 5

Part-A

- 1) The color of quinonoid form of phenolphthalein is
(a) yellow (b) pink (c) red (d) colorless
- 2) For the titration between HCl and Na_2CO_3 indicator is used is
(a) KMnO_4 (b) methyl orange (c) phenolphthalein (d) litmus
- 3) The substances which allows electric current to pass through them completely are known as
(a) semiconductors (b) conductors (c) insulators (d) resistors
- 4) An example for semiconductor is
(a) benzene (b) alloys (c) titanium dioxide (d) CCl_4
- 5) The value of enthalpy of neutralisation of strong acid by strong base is
(a) $57.32 \text{ KJ equiv}^{-1}$ (b) $-57.32 \text{ KJ equiv}^{-1}$ (c) $-72.57 \text{ KJ equiv}^{-1}$ (d) $-72.23 \text{ KJ equiv}^{-1}$

Part-B

5 x 3 = 15

- 6) What are intrinsic semiconductors?
- 7) What are extrinsic semiconductors?
- 8) What is electrolysis?
- 9) State Faraday's first and second laws of electrolysis.
- 10) Write any two importance of the Faraday's first law of electrolysis.

Part-C

6 x 5 = 30

- 11) 0.04N solution of a weak acid has a specific conductance $4.23 \times 10^{-4} \text{ mho cm}^{-1}$. The degree of dissociation of acid at this dilution is 0.0612. Calculate the equivalent conductance of weak acid at infinite dilution
- 12) Find the pH of a buffer solution containing 0.3 mole per litre CH_3COONa and 0.15 mole per litre CH_3COOH . K_a for acetic acid is $1.8 \times 10^{-5} \text{ M}$
- 13) Calculate the mass of copper deposited by the electrolysis of CuSO_4 solution for 1 hr with a steady current of 1A.
- 14) What are the evidences in favour of Arrhenius theory of electrolytic dissociation?
- 15) Write notes of the conduction of electric current in an extrinsic conductor.
- 16) Write the difference between electronic and electrolytic conduction.

Part-D

2X10=20

- 17) a) Calculate the equivalent conductance of 0.1M H_2SO_4 solution whose conductivity is $26 \times 10^{-2} \text{ ohm}^{-1} \text{ cm}^{-1}$.
b) The dissociation constant of a 0.01M weak mono basic acid is 2×10^{-4} what is the percentage of ionisation. Calculate the pH of the solution.
- 18) a) Explain the mechanism of buffer action with an example.
b) Discuss the application of Kohlrausch's law.

(OR)

- b) a) What is common ion effect? Explain with two examples.
b) Discuss the selection of pH indicators for acid-base titrations.
