Reg. No. | | | | | | | | | | | |

D.K.M. COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1

SEMESTER EXAMINATIONS

APRIL – 2018 15CCH6C

ELECTIVE III: ELECTROCHEMISTRY

Time : 3 Hrs **Max. Marks : 75**

SECTION-A (10 x 2 = 20)

Answer ALL the questions.

1. Define equivalent and molecular conductance of solutions.
2. What is buffer solution? Give example.
3. Write the Debye-Falkenhagen effect.
4. Explain the term Wien effect.
5. What is galvanic cell?
6. Write a short note on the 'standard Cell'.
7. What is meant by cell emf?
8. What do you understand by EMF of a galvanic cell?
9. What are fuel cells? Give example.
10. What do you understand by the term transport number?

SECTION-B (5 x 5 = 25)

Answer any FIVE of the following questions.

11. How are strong electrolytes distinguished from weak electrolytes?
12. Write the Kohlrausch's law and mention its applications.
13. Write a brief note on conductometric titrations.
14. Explain the Onsager theory. How will you verify the Onsager equation?
15. What are reversible and irreversible electrodes?
16. Derive an expression for the emf of concentration cell without transference.
17. Write a notes on potentiometric titrations.
18. How will you determine the pH using quinhydrone and glass electrodes?

SECTION-C (3 x 10 = 30)

Answer ALL the questions.

19. (a) How will you determine the transport number by Hittorff's and moving boundary method?

(Or)

(b) Discuss qualitatively Debye – Huckel theory of strong electrolytes.

20. (a) Explain single electrode potential and standard electrode potential. How are they measured?

(Or)

(b) Derive the Nernst equation for electrode potential and emf of a cell.

21. (a) Discuss the mechanism of discharging and recharging of lead acid battery.

(Or)

(b) (i) Write notes on liquid junction potential.

(ii) Discuss the construction of Weston Cadmium cell. (5 + 5)

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