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**D.K.M. COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1**  
**SEMESTER EXAMINATIONS**  
**NOVEMBER – 2018**  
**ELECTIVE : MODERN INSTRUMENTATION TECHNIQUES**

**15CPCH1D**

**Time : 3 Hours**

**Max. Marks: 75**

**SECTION – A (5 x 6 = 30)**

**Answer ALL the questions.**

- (a) Draw a neat diagram and explain the theory of Polarography.  
(Or)  
(b) Explain the principle and uses of amperometric titration.
- (a) Discuss briefly about the ion exchange method.  
(Or)  
(b) Write short notes on Gas Liquid chromatography.
- (a) Explain in detail about the thermo balance. Give the factors affecting TGA curve.  
(Or)  
(b) What you mean by neutron activation analysis? Explain.
- (a) Explain the term Electrogravimetry and its advantages.  
(Or)  
(b) Discuss the principle and the curve obtained by potentiometric titrations.
- (a) i) What is nanosensors? Give its merits. ii) What is meant by confocal microscopy? (3x2)  
(Or)  
(b) Write short notes on AFM, SEM and TEM.

**SECTION – B (3 x 15 = 45)**

**Answer any THREE of the following questions.**

- a) Explain the qualitative and quantitative applications of polarography technique. (6)  
b) Discuss the types of EDTA titrations. (6)  
c) What is meant by masking and de - masking agents? (3)
- a) Discuss the principle, instrumentation and applications of HPLC. (10)  
b) Write short notes on flame Ionization detector. (5)
- a) Discuss the principle, instrumentation and uses of AAS. (10)  
b) What is DTA? Explain the characterisation of DTA curve. (5)
- a) Explain the principle, instrumentation and applications of Coulometric analysis. (8)  
b) What are the importances of over voltage? (2)  
c) Discuss the principle of Conductometric titrations. (5)
- Write short notes on a) SPL b) DPN c) Optical microscopy. (5+5+5)

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