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S.No.: 148 BATCH: 2016 , 2017 Reg. No.:

END OF SEMESTER EXAMINATIONS, NOVEMBER – 2018
ELECTIVE – II: PHYSICAL METHODS IN CHEMISTRY - I
SUBJECT CODE : 16P3CH08

MAJOR : M.Sc. (Chemistry) SEMESTER : II
TIME : 3 Hours MAX. MARKS: 70

SECTION – A (10 x 1 = 10)

Answer ALL the Questions:

1. Write the formula used in activation analysis by absolute method.
2. What is radioactivity? Give its units.
3. Give the principle involved in thermometric titrations.
4. Name the apparatus used in TGA instrument.
5. Define circular dichroism.
6. What is meant by amperometric titration?
7. Differentiate absorption and emission spectra.
8. In what way FES is different from AAS?
9. Name the colouring agent used in the identification of amino acids in TLC.
10. Indicate any two adsorbents used in TLC.

SECTION – B (5 x 4 = 20)

Answer ALL the Questions:

11. a) Describe the absolute method of activation analysis.

(OR)

b) Explain labelled reagents with examples.

12. a) List out the applications of refractometry.

(OR)

b) Sketch and explain the DTA curve of $CaC_2O_4.H_2O$.

13. a) What are plain and anamalous curves? Explain.

(OR)

b) State and explain the axial haloketone rule. Give its applications.

14. a) Discuss the techniques of flame emission spectrometry.

(OR)

b) How is lead detected? Explain.

15. a) TLC is superior than other chromatographic techniques – Why?

(OR)

b) Illustrate the purification process of some common organic solvents.

SECTION – C (5 x 8 = 40)

Answer ALL the Questions:

16. a) Discuss the principle and techniques of liquid scintillation counter.

(OR)

b) Explain the principle and applications of isotope dilution methods.

17. a) Discuss the principle, instrumentation and applications of thermogravimetry.

(OR)

b) Briefly explain about Abbe's refractometer.

18. a) Describe the principle, instrumentation and applications of nephelometry.

(OR)

b) Write the principle, instrumentation and applications of cyclic voltametry.

19. a) Explain the principle, instrumentation and applications of Atomic Absorption Spectrometry.

(OR)

b) Write the theory and applications of phosphorescence.

20. a) What is ion exchange chromatography? Give the principle, techniques and applications of ion exchange chromatography.

(OR)

b) Describe the principle, techniques and application of HPLC.

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