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Reg. No. : .....

Name : .....

**Fourth Semester M.Sc. Degree Examination, June 2025**

**Analytical Chemistry**

**CL 242 : APPLIED ANALYTICAL CHEMISTRY**

**(2020 Admission Onwards)**

Time : 3 Hours

Max. Marks : 75

SECTION – A

Answer **two** among (a), (b) and (c) from each. Each sub question carries **2** marks.

1. (a) What are the radio isotopes used in medicine and explain its importance?  
(b) What is radioactive tracer technique?  
(c) Explain TMA analysis?
2. (a) What are food adulterants?  
(b) Explain saponification value?  
(c) Give examples for Organo Chlorine pesticides?
3. (a) Explain any four steps involved in DNA Finger printing?  
(b) Write down the remedial measures taken during poisoning of nicotinoids?  
(c) What are antidotes, Give example?

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4. (a) What are analgesics, Give example?  
(b) Write down the principle for glucose estimation.  
(c) Explain the biological significance of tyrosinase.
5. (a) Explain the principle of AAS.  
(b) What are the types of burners used in flame spectrometry?  
(c) What are the disadvantages of AAS?

**(10 × 2 = 20 Marks)**

SECTION – B

Answer either (a) or (b) from each questions. Each sub question carries **5** marks.

6. (a) Explain the radiometric titration curves for the detection of ions.  
(b) Explain neutron activation analysis and its applications.
7. (a) Explain Mojonnier method for detecting Fat.  
(b) Explain Iodine value of Iodine bromine value.
8. (a) Give a detailed description of forensic analysis of blood and urine.  
(b) Discuss the significance of LD<sub>50</sub> and LC<sub>50</sub>.
9. (a) Compare classical and modern methods for drug analysis.  
(b) Discuss the any two quality parameters for checking the standard of alcoholic beverages.
10. (a) Discuss the instrumentation of AES analysis.  
(b) Discuss theory and principle of XPS.

**(5 × 5 = 25 Marks)**

## SECTION – C

Answer any **three** questions. Each question carries **10** marks.

11. Discuss in detail about theory, principal and instrumentation of TMA and DMA?
12. Explain Phenol-Sulfuric acid method for the determination of total carbohydrates and Nelson-Somogyi method for determination of reducing sugars?
13. Discuss the basic principles and significance, sampling, sample storage of Forensic analysis?
14. Describe on principle and detail the method of estimation of cholesterol in biological samples.
15. Explain the theory and instrumentation of X-ray fluorescence.

**(3 × 10 = 30 Marks)**

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