



Seat No. _____

HC-003-1104012

M. Sc. (Sem. IV) (CBCS) Examination

April - 2023

Chemistry : C(PA)-404 (Ele.-1)

(Applied Analytical Chemistry) (New Course)

Faculty Code : 003

Subject Code : 1104012

Time : $2\frac{1}{2}$ / Total Marks : 70

Instructions :

- (1) All questions are compulsory.
- (2) All questions carry equal marks.

1 Answer the following : (any seven) **14**

- (a) What is solvent extraction ? Give the types of extractant system.
- (b) What are preservatives ? Classify it with examples.
- (c) Give the function of blood.
- (d) What is ore ? Classify them.
- (e) Write the parameters for determining the green nature of analytical chemistry.
- (f) Explain process analytical technologies.
- (g) In the extraction of cerium (IV) with 2-theonyl trifluoroacetone in benzene, the distribution ratio was 999.0. If the volume of organic phase was 10 cm^3 and that of aqueous phase 25 cm^3 , what was the percentage extraction ?
- (h) What are food colours ? Classify and give their name and role in food preservation.
- (i) How will you estimate serum barbiturates in blood sample ?
- (j) What is bauxide ? Give its chemical composition.

- 2 Answer the following : (any two) 14
- (a) Discuss mechanism of solvent extraction in detail.
 - (b) Discuss solvent extraction involving ion association complexes in detail.
 - (c) Give the application of solvent extraction.

- 3 Answer the following : 14
- (a) How will you analyze Sn and Pb in Tin Solder alloy ?
 - (b) Classify the solvent free sample preparation method in detail.

OR

- (a) How will you analyze acid insoluble residue and iron in Haematite ore ?
- (b) Discuss PAT implementation in detail.

- 4 Answer the following : 14
- (a) How will you analyze glucose in blood sample ?
 - (b) How will you estimate uric acid in blood serum sample ?

- 5 Answer the following : (any two) 14
- (a) How will you analyze nitrate and nitrite as preservative in food products ?
 - (b) How will you determine saccharin in jam, jelly and fruit juice sample ?
 - (c) Discuss the green methodology in analytical chemistry.
 - (d) How will you analyze CaO and MgO in dolomite ?
