



**DP-003-1104012**

Seat No. \_\_\_\_\_

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

**March / April - 2022**

**Chemistry : C(PA)-404**

*(Applied Analytical Chemistry) (Ele. - 1) (New Course)*

**Faculty Code : 003**

**Subject Code : 1104012**

Time :  $2\frac{1}{2}$  Hours]

[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 its separation methods and purpose.
  - (b) What are food additives ? Give the purpose of its addition.
  - (c) How will you collect blood for plasma or whole blood analysis ?
  - (d) What is solid phase micro extraction ?
  - (e) Define ore and alloy. What are common alloys ?
  - (f) In solvent extraction of uranium with 8-hydroxy quinoline in  $\text{CHCl}_3$ , the volume of aqueous and organic phase were  $25 \text{ cm}^3$  when the percentage extraction was 99.8%. Calculate the distribution ratio.
  - (g) What are food colours ? Classify and give their name and role in food preservation.
  - (h) How will you estimation of serum albumin and globulin in blood sample ?

- (i) Give the principle of green analytical chemistry.
- (j) How will you analyze  $\text{Al}_2\text{O}_3$  in bauxite sample ?

- 2** Answer the following : (any two) **14**
- (a) Discuss partition theory of solvent extraction.
  - (b) Explain solvent extraction by macromolecules in detail.
  - (c) Give the application of solvent extraction.

- 3** Answer the following : **14**
- (a) How will you analyze chloride in blood sample ?
  - (b) Discuss in detail the determination of benzoic acid in food sample.

**OR**

- 3** Answer the following : **14**
- (a) How will you analyze CaO and MgO in dolomite ?
  - (b) Discuss microwave enhance chemistry in green analytical chemistry.

- 4** Answer the following : **14**
- (a) How will you analyze serum calcium in blood sample ?
  - (b) Write note on composition of blood.

- 5** Answer the following : (any two) **14**
- (a) What are emulsifiers, stabilizers and thickeners ? Give their names and role of in food materials. How will you detect stabilizing agent in food materials ?
  - (b) How will you analyze copper and zinc in brass sample ?
  - (c) Give the classification of solvent free sample preparation methods in detail.
  - (d) Give the analysis of lime-stone in detail.