



**HDZ-003-1103012** Seat No. \_\_\_\_\_

**M. Sc. (Chemistry) (Sem. III) (CBCS) Examination**

November / December – 2017

**CPA-304 : Selected Topics in Analytical Chemistry**

*(Elective-1) (New Course)*

**Faculty Code : 003**

**Subject Code : 1103012**

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) Define the term drug. Give difference between a drug and a medicine.
- (b) Give the limit test of sulphate with reaction.
- (c) What are organo phosphorous compounds ? Classify them with examples.
- (d) Draw the flow sheet for analysis of total nitrogen in fertilizers.
- (e) What are pesticide formulations ? Give the examples.
- (f) How will you analyze citrate soluble potassium in fertilizer ?
- (g) Give the qualitative test for carbohydrates, steroids and proteins.
- (h) Give the chemical composition of cement. How will you analyze the test of loss on drying in it ?
- (i) List the physico chemical parameters for phytochemicals and give the test for determination of total ash value.
- (j) What are cosmetics ? Classify them with examples.

- 2** Answer the following : (any **three**) **14**
- (a) Classify the drugs in detail.
  - (b) How will you analyze codeine and morphine by fluorimetry and aspirin, phenacetin and coffeine by IR spectrometric method ?
  - (c) What are the limit tests ? How will you perform limit tests for heavy metals and iron ?
  - (d) Describe the screening of drug molecules by GC-MS.
- 3** Answer the following : **14**
- (a) Give the types of dental care preparation with ingredients. Discuss the Q.C. tests for dental care products.
  - (b) How will you analyze  $R_2O_3$  loss and drying in cement sample ?
- OR**
- (a) How will you analyze acid soluble, acid insoluble and calcium cement in cement ?
  - (b) Give the definition of Shampoo. List the types and ingredients of Shampoo and discuss the tests for it in detail.
- 4** Answer the following : (any **two**) **14**
- (a) Give the analytical principle and procedure for the estimation of DDT.
  - (b) Give the analytical principle and procedure for the estimation of malathion.
  - (c) How will you analyze phosphorous in fertilizer ? Draw flow sheet for analysis of phosphoric acid.
- 5** Answer the following : (any **two**) **14**
- (a) How will you extract and isolate fatty acids from natural products ? Discuss the qualitative and quantitative method for it.
  - (b) What are alkaloids ? Give their isolation method, qualitative and quantitative analytical technique.
  - (c) How will you prepare extract for phytochemical analysis ? Give the qualitative and quantitative analysis method for phenols and total tannin.
  - (d) Explain water soluble and alcohol soluble extractive value and discuss the qualitative and quantitative tests for saponin and carbohydrate.