DJJ-003-010417 Seat No. _____

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

May / June – 2015

Chemistry : C(PA) - 404

(Pharmaceutical & Industrial Analysis)

Faculty Code : 003

Subject Code : 010417

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)

(a) Give the analytical profile of milk. What are common adulterants found in milk ? How will you detect three of them ?

(b) Give the limit test of iron.

(c) Organic compound X is removed from aqueous solution by extraction with ether. The distribution coefficient is about 10. If aqueous solution containing 2.5 mg f X how much could be extracted with equal volume of ether ?

(d) Define and classify fertilizers. How will you detect potassium in it ?

(e) What are food preservatives ? Classify them and give the list of methods for its determination.

(f) Give the principle of solvent extraction and explain distribution law.

(g) How will you detect lead chromate in chillies, turmeric and curry powder ?

(h) Explain organophosphorous pesticides with classification.

(i) What is emulsifiers, stabilizers and thickners ? Give their role in food material.

(j) How will you detect argemone oil and sesame oil in edible oil ?

2   Answer the following : (any **three**)

   (a)   How will you detect and estimate benzoic and sorbic acid used as preservatives in beverages and liquid products ?

   (b)   What are antioxidants ? Give qualitative tests for propyl gallate, BHA, BHT in oils and fats. Discuss quantitative method for any one of them.

   (c)   How will you isolate, identify and estimate coal-tar in food colors ?

   (d)   What happens when milk is boiled or heated ? Give stepwise procedure.

3   Answer the following :

   (a)   (i)   Derive an equation for n^{th} extraction.

        (ii)   Iodine may be extracted from an aqueous solution in to various organic solvents. The distribution coefficient for extraction by CCl_4 is 85. If 50 ml of an aqueous solution containing 2.0×10^{-2} m mol of I_2 is contacted with 30 ml of CCl_4; calculate the amount of I_2 in aqueous phrase and in CCl_4.

   (b)   Write a note on extraction by metal chelate formation.

                           OR

   (b)   Write note on extraction by ion pair formation.

4   Answer the following : (any **two**)

   (a)   Give the analytical principle and procedure the determination of DDT. Explain briefly pesticides formulation with suitable example.

   (b)   Give the analytical principle of determination of parathion, BHC and endosulphan. Explain practical determination procedure for any one of them.

   (c)   Give the name of inorganic pesticide and discuss any one of them. Briefly explain formulation of liquid pesticides.

5   Answer the following : (any **two**)

   (a)   Explain limit test. Give limit test of heavy metals in detail.

   (b)   Give the monograph of diazepam in detail.

   (c)   How will you determine total phosphorus and water soluble phosphorous in fertilizers ?

   (d)   Give the monograph of paracetamol in detail.