AG—47—2018

FACULTY OF SCIENCE

M.Sc. (Second Year) (Fourth Semester) EXAMINATION

OCTOBER/NOVEMBER, 2018

(CBCS Pattern)

ANALYTICAL CHEMISTRY

Paper XVII (CH–541/4)

(Industrial Analytical Chemistry)

(Tuesday, 27-11-2018)   **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 Hours   *Maximum Marks—75*

N.B. :— (i)   Attempt *All* questions.

     (ii)   *All* questions carry equal marks.

     (iii)   Use of log table/calculator is allowed.

1. Solve any *three* of the following :   3×5=15

   (a)   What are the constituents of glass ? Explain its type.

   (b)   Give the composition of cement. How the SiO_2 in cement estimated ?

   (c)   What is Rubber ? Give their properties.

   (d)   Write a note on Antiknocking compound of fuel.

   (e)   Explain properties of plastics in detail.

2. Answer any *three* of the following :   3×5=15

   (a)   Explain the procedure for estimation of calcium in cement.

   (b)   What is Fuel ? Give classification of fuel.

   (c)   What is Glass ? Explain the types of glass.

   (d)   Explain preparation of culture yeast on large scale.

   (e)   What are oils ? Give its classification.

P.T.O.

3. (*a*) Solve any *one* of the following : 8

   (*i*) What is calorific value of fuel ? Explain the procedure for Aniline value of fuel.

   (*ii*) What are drugs ? Write a short note on storage of drugs.

   (*b*) Solve any *one* : 7

   (*i*) How are chromatographic techniques used in drug analysis ?

   (*ii*) What are paints ? Explain the various applications of paints.

4. (*a*) Solve any *one* : 8

   (*i*) Give the process of white crystalline sugar.

   (*ii*) What is saponification value of an oil ? How is it determined ?

   (*b*) (*i*) Explain the process of manufacture of vinegar. 7

   (*ii*) What are Enzymes ? Explain the application of vinegar.

5. (*a*) Choose the correct choice : 5×1=5

   (*i*) Synthetic Rubber is manufactured from :

   (*a*) Polymerization of Lattice

   (*b*) Natural lattices

   (*c*) Both (*a*) and (*b*)

   (*d*) None of the above

   (*ii*) Which reagent is used to find out the iodine value of an oil ?

   (*a*) Wijj's reagent

   (*b*) Karl-Fisher's reagent

   (*c*) Cyperon reagent

   (*d*) 8-hydroxy quinoline

   (*iii*) By which parameter antiknocking properties of fuel are measured ?

   (*a*) Cetane number

   (*b*) Octane number

   (*c*) Iodine number

   (*d*) Saponification number

     (iv)   Which component is more in cement ?

         (a) SiO_2

         (b) Al_2O_3

         (c)   CaO

         (d) Fe_2O_3

     (v)   The temperature at which a particular organic compound gives off sufficient vapour to ignite in air is known as :

         (a)   Triple point

         (b)   Smoke point

         (c)   Flash point

         (d)   End point

(b)   Write notes on any *two* :   2×5=10

     (i)   Red-Lead pigment

     (ii)   Natural Gasoline

     (iii)   Cetane and octane number.