This question paper contains **4** printed pages]

Y—52—2019

FACULTY OF SCIENCE

B.Sc. (Second Year) (Third Semester) (Backlog) EXAMINATION

OCTOBER/NOVEMBER, 2019

CHEMISTRY

Paper VI

(Organic and Inorganic Chemistry)

(MCQ & Theory)

(Wednesday, 16-10-2019) **Time : 2.00 p.m. to 4.00 p.m.**

Time—2 *Hours* *Maximum Marks*—40

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

(*ii*) *All* questions carry equal marks.

(*iii*) Use separate answer sheet (OMR sheet) for MCQ Question No. **1**.

MCQ

1. Select the *correct* answer for each of the following Multiple Choice Questions : 10

(*i*) Reformatsky reaction involves the preparation of :

(*a*) β-hydroxy alcohol (*b*) β-hydroxy acid

(*c*) β-hydroxy ester (*d*) β-hydroxy ketone

(*ii*) The CN^{Θ} anion in Benzoin condensation is :

(*a*) Good nucleophile (*b*) Strong base

(*c*) Best leaving group (*d*) Both (*a*) and (*c*)

(*iii*) $CH_3Li + H_2O \rightarrow A$, where A is :

(*a*) CH_3OH (*b*) CH_4

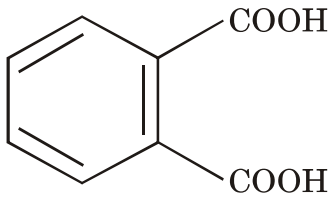
(*c*) CH_3OCH_3 (*d*) $CH_3—CH_3$

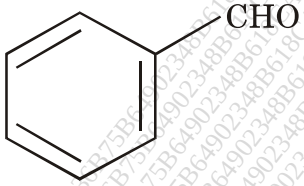
P.T.O.

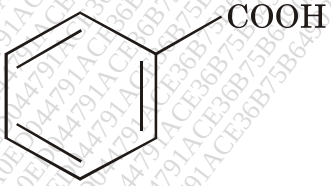
(*iv*) The structural isomer which differs in the relative position of atoms is called :

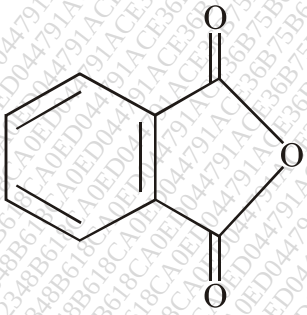
(*a*) Tautomerism (*b*) Stereoisomerism

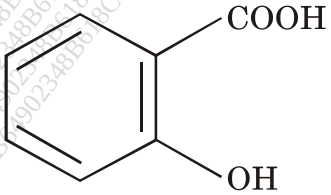
(*c*) Conformers (*d*) Rotamers

(*v*) 

(*a*) 

(*b*) 

(*c*) 

(*d*) 

(*vi*) Aniline is obtained by heating :

(*a*) Salicylic Acid (*b*) Benzoic Acid

(*c*) Anthranilic Acid (*d*) Phthalic Acid

(*vii*) The alkaline hydrolysis of fats or oils is called :

(*a*) Saponification value (*b*) Acid value

(*c*) Iodine value (*d*) None of these

(*viii*) In qualitative analysis ..... organic reagent is used for copper.

(*a*) 1, 10-phenanthroline (*b*) α-benzoin oxime

(*c*) Dimethyl glyoxime (*d*) 8-hydroxyquinoline

(*ix*) The positively charged part of a salt is called as :

(*a*) Acidic radical (*b*) Basic radical

(*c*) Neutral radical (*d*) Amphoteric radical

(*x*) ..... acts as a universal solvent.

(*a*) Liquid SO_2 (*b*) Liquid NH_3

(*c*) Water (*d*) None of these

Theory

Section 'A' : Organic Chemistry

2. Solve any *two* of the following : 10

(*a*) Explain Knoevenagel reaction with mechanism.

(*b*) How will you synthesize salicylic acid by :

(*i*) Kolbe's reaction

(*ii*) Reimer-Tiemann reaction.

(*c*) What are organozinc compounds ? How will you obtain the following from dimethyl zinc :

(*i*) 2-propanone

(*ii*) Ethanol.

(*d*) Explain Saponification value and cleaning action of soaps.

3. Solve any *two* of the following : 10

(*a*) Explain Gattermann reaction with mechanism.

(*b*) (*i*) How will you prepare benzoic acid from phenyl cyanide ?

(*ii*) What are detergents ? Give the classification of detergents.

(*c*) Explain reduction of ketones to secondary alcohol by $LiAlH_4$ with mechanism.

(*d*) How will you synthesize cyclohexanone pyrrolidine enamine from pyrrolidine and cyclohexanone morpholine enamine from morpholine ?

P.T.O.

Section 'B' : Inorganic Chemistry

4. Solve any *two* of the following : 10

(*a*) (*i*) What are interfering radicals ? Which acidic radical interfere in the analysis of basic radicals ?

(*ii*) Discuss the autoionization of liquid ammonia as a solvent.

(*b*) Discuss the term solubility product. Give the role of solubility product in separation of II and III B group basic radical in qualitative analysis.

(*c*) Explain the role of the following organic reagent in qualitative analysis :

(*i*) 8-hydroxyquinoline

(*ii*) α-nitroso-β-naphthol.

(*d*) Describe the following reactions in liquid sulphur dioxide with suitable examples :

(*i*) Precipitation

(*ii*) Solvolysis.