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**BF—45—2016**

**FACULTY OF SCIENCE**

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

**OCTOBER/NOVEMBER, 2016**

**CHEMISTRY**

**Paper VI**

**(Organic + Inorganic Chemistry)**

**(MCQ & Theory)**

**(Friday, 14-10-2016)**

**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 :

(i) Acetophenone on reduction with  $\text{NaBH}_4$  gives :

(a) Acetaldehyde

(b) Formaldehyde

(c) Benzoic acid

(d) 1-phenyl ethanol

(ii) Baeyer Villiger oxidation takes place in presence of :

(a)  $\text{AlCl}_3$

(b) Pyridine

(c) Peracids

(d)  $\text{CH}_3\text{COONa}$

(iii) Phenyl cyanide on hydrolysis gives :

(a) Benzoic acid

(b) Anthranilic acid

(c) Salicylic acid

(d) Phthalic acid

(iv) Phthalic acid on heating gives :

(a) Benzene

(b) Phthalic anhydride

(c) Benzoic acid

(d) None of these

P.T.O.

- (v) When methyl lithium reacts with water it gives :
- (a) Methanol (b) Methane  
(c) Ethane (d) Methanoic acid
- (vi) When ethyl iodide reacts with zinc in presence of carbon dioxide, it gives :
- (a)  $(C_2H_5)_2Zn$  (b)  $(CH_3)_2Zn$   
(c)  $C_2H_5Zn$  (d)  $CH_3Zn$
- (vii) ..... are the sodium or potassium salts of fatty acids.
- (a) Oils (b) Fats  
(c) Soaps (d) Detergents
- (viii) Which of the following is Interfering radical ?
- (a) Iodide (b) Bromide  
(c) Chloride (d) Fluoride
- (ix) The organic reagent used in the analysis of  $Al^{+3}$  ion is :
- (a) DMG (b) Cupron  
(c) 8-hydroxy Quinoline (d) None of these
- (x)  $NH_4Cl + KNH_2 \xrightarrow{\text{liq. } NH_3} KCl + 2NH_3$  is an example of ..... reaction.
- (a) Redox reaction (b) Precipitation reaction  
(c) Acid base reaction (d) None of these

**(Theory)**

**Section A**

**(Organic Chemistry)**

2. Solve any *two* of the following :
- (a) Explain Benzoin condensation with mechanism.  
(b) How will you synthesize salicylic acid by :
- (i) Kolbe's reaction  
(ii) Reimer Tiemann Reaction.

- (c) What are organomagnesium compounds ? How will you obtain the following from methyl magnesium bromide ?
- (i) Methane
  - (ii) 2-Methyl 2-propanol.
- (d) What is the action of the following on oils and fats :
- (i)  $H_2O$
  - (ii) NaOH.
3. Solve any *two* of the following :
- (a) Explain MPV reduction with mechanism.
  - (b) (i) How will you prepare Aniline from Benzene Sulphonic acid ?  
(ii) Give the difference between Hard detergents and Soft detergents.
  - (c) What are enamines ? How will you synthesize ? Explain the use of Enamine in Acylation and Alkylation.
  - (d) Explain Mannich reaction with mechanism.

### Section B

#### (Inorganic Chemistry)

4. Solve any *two* of the following :
- (a) Explain the role of  $Na_2CO_3$  in Qualitative analysis.
  - (b) What is solubility product principle ? Explain its role in separation of II and IIIB group radicals.
  - (c) What are solvents ? How are they classified ?
  - (d) (i) Explain the use of Dimethyl Glyoxime in Qualitative analysis.  
(ii) Explain Autoionisation and Solvolysis reactions in liq.  $SO_2$  medium.