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R—43—2017

FACULTY OF SCIENCE

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

MARCH/APRIL, 2017

CHEMISTRY

Paper VI

(Organic + Inorganic Chemistry)

(MCQ & Theory)

(Monday, 27-3-2017)

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.

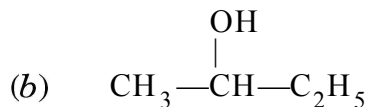
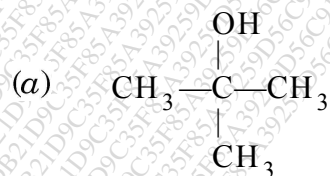
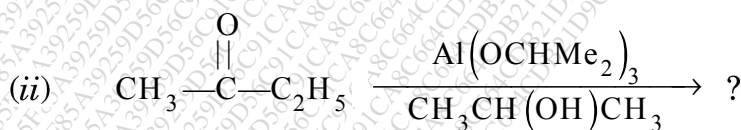
(iii) Use separate answer-sheet (OMR sheet) for MCQ No. 1.

MCQ

1. Select the *correct* answer for each of the following multiple choice questions :

(i) Benzoin is obtained by condensation of in presence of potassium cyanide.

- (a) Benzaldehyde and acetophenone
- (b) Benzaldehyde and acetic anhydride
- (c) Two molecules of benzaldehydes
- (d) Two molecules of acetophenones



(d) None of these

P.T.O.

- (iii) The reaction which involve the oxidation of ketone to ester in presence of per acid, this reaction is known as :
- Cannizzarou's reaction
 - Benzoin condensation reaction
 - Bayer-Villiger oxidation reaction
 - None of the above
- (iv) When salicylic acid reacts with acetic anhydride in presence of conc. H_2SO_4 , it gives :
- Phenol
 - Salol
 - Asprin
 - None of these
- (v) Methyl magnesium bromide reacts with chloroamine, it gives :
- $\text{CH}_3\text{—Br}$
 - $\text{CH}_3\text{—Cl}$
 - $\text{CH}_3\text{—NH}_2$
 - None of these
- (vi) Methyl-Lithium reacts with ethanol, it gives :
- Methane
 - Ethane
 - Methanol
 - Ethanal
- (vii) Sodium or potassium salt of fatty acids are called as :
- Glycol
 - Soap
 - Propanol
 - Glycerol
- (viii) Solvents are arranged according to increasing order of their boiling points. Which of the following order is *correct* ?
- $\text{H}_2\text{O} < \text{NH}_3 < \text{SO}_2$
 - $\text{NH}_3 < \text{SO}_2 < \text{H}_2\text{O}$
 - $\text{SO}_2 < \text{NH}_3 < \text{H}_2\text{O}$
 - $\text{NH}_3 < \text{H}_2\text{O} < \text{SO}_2$
- (ix) The organic reagent $\text{CH}_3\text{—C}=\text{NOH}$ is used for analysis :
- $$\begin{array}{c} \text{CH}_3\text{—C}=\text{NOH} \\ | \\ \text{CH}_3\text{—C}=\text{NOH} \end{array}$$
- Ni^{++} ion
 - Fe^{+++} ion
 - Al^{+++} ion
 - Cu^{++} ion

- (x) In macroanalysis, the quantity of material used for analysis is :
- (a) 0.001 gms (b) 0.01 gms
- (c) 0.1 to 0.5 gms (d) None of these

Theory

Section A

(Organic Chemistry)

2. Answer any *two* of the following :
- (a) Explain Knoengel reaction with mechanism.
- (b) What is action of the following on Phthalic acid :
- (i) Ethanol
- (ii) Heat
- (iii) PCl_5 ?
- (c) Explain alkylation reaction of Enamine.
- (d) Write notes on the following :
- (i) Saponification value
- (ii) Iodine value.
3. Answer any *two* of the following :
- (a) Explain Mannich reaction with mechanism.
- (b) What is the action of the following on ethy acetoacetate :
- (i) H_2O
- (ii) $\text{CH}_3\text{—Br}$?
- (c) (i) Explain Perkin reaction.
- (ii) Give any *two* methods of preparation of Benzoic acid.
- (d) (i) Explain cleansing action of soap.
- (ii) How will you prepare Methyl-Lithium from methyl bromide and what is the action of Hydrogen cyanide on Methyl-Lithium ?

P.T.O.

Section B**(Inorganic Chemistry)**

4. Answer any *two* of the following :

- (a) Give the classification of solvents with suitable examples.
- (b)
 - (i) Explain precipitation reaction occurring in liq. ammonia medium.
 - (ii) Explain the use of solubility product principle in qualitative analysis.
- (c) Explain the separation of III A and III B group in qualitative analysis.
- (d) Explain the use of 8-hydroxy quinoline and 1, 10 phenanthroline in qualitative analysis.