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V—42—2017

FACULTY OF SCIENCE

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

OCTOBER/NOVEMBER, 2017

(CBCS/CGPA Pattern)

CHEMISTRY

Paper VI

(Organic and Inorganic Chemistry)

(Thursday, 12-10-2017)

Time : 2.00 p.m. to 4.00 p.m.

Time—Two 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

10

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

(i) The reaction in which ketone converts into secondary alcohol with aluminium isopropoxide in excess of isopropyl alcohol. The reaction is known as :

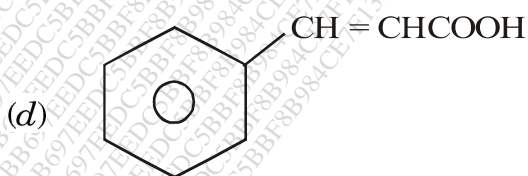
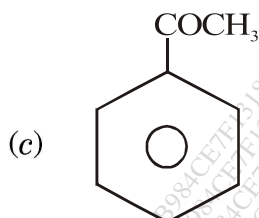
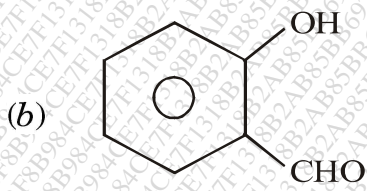
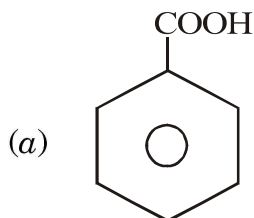
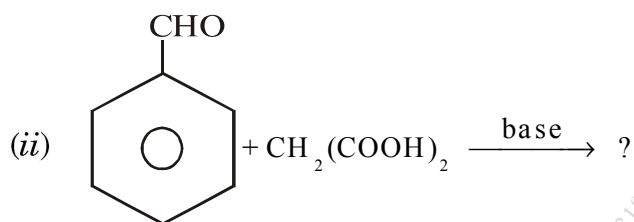
(a) M.P.V. reduction

(b) Clemmensen reduction

(c) Oppenauer oxidation

(d) Baeyer-Villiger oxidation

P.T.O.



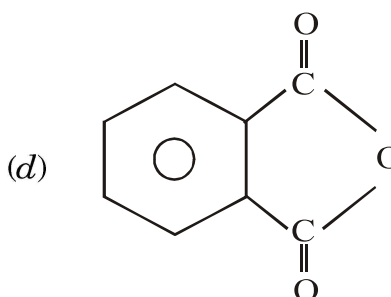
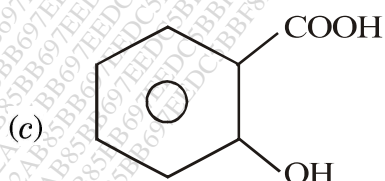
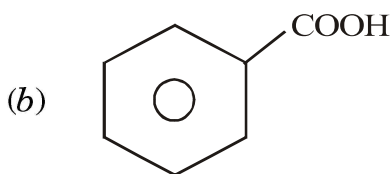
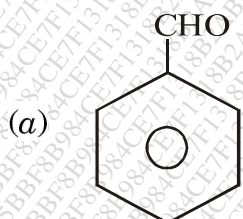
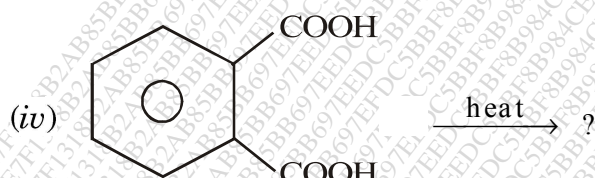
(iii) Oxidation of Toluene with KMnO_4 gives :

(a) Benzene

(b) Benzoic acid

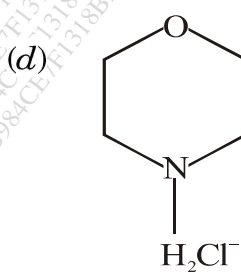
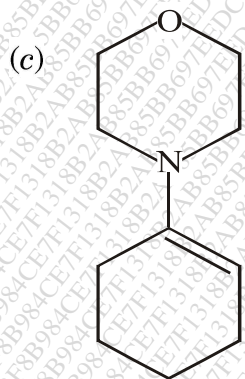
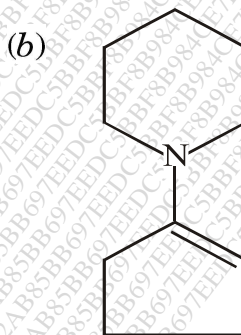
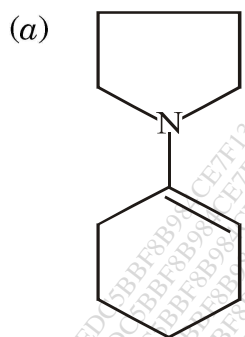
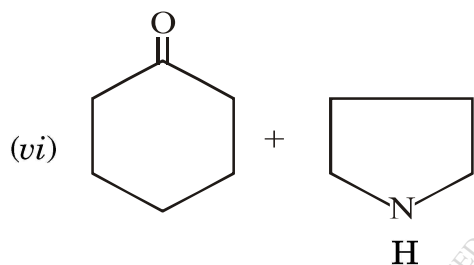
(c) Benzyl alcohol

(d) Phenol



(v) When methyl lithium reacts with formaldehyde it gives :

- (a) Methanol (b) Ethanol
(c) Propanol (d) None of these



(vii) The degree of unsaturation of fats or oil is measured by its

- (a) Acid number (b) Iodine number
(c) Saponification number (d) None of these

P.T.O.

- (viii) Trouton's constant value of ammonia is :
- (a) $108.8 \text{ JK}^{-1} \text{ mol}^{-1}$ (b) $94.79 \text{ JK}^{-1} \text{ mole}^{-1}$
(c) $101.2 \text{ JK}^{-1} \text{ mole}^{-1}$ (d) None of these
- (ix) Which of the following is *not* a II A group basic radical :
- (a) Pb^{++} (b) Bi^{3+}
(c) As^{3+} (d) Cu^{++}
- (x) For the qualitative analysis of cobalt, organic reagent used is
- (a) α -Benzoinoxime (b) DMG
(c) α -nitroso β -naphthol (d) 1,10 Phenanthroline

Theory

(Section A—Organic Chemistry)

2. Solve any *two* of the following : 10
- (a) Explain Mannich reaction with mechanism.
(b) How will you synthesize anthranilic acid from :
(i) Phthalimide
(ii) O-nitro toluene ?
(c) What are organo zinc compounds ? How will you obtain the following from diethyl zinc :
(i) Ethanol
(ii) 2-propanone.
(d) Explain Reichert Meissl value and cleansing action of soaps.
3. Solve any *two* of the following : 10
- (a) Explain Oppenauer oxidation reaction with mechanism.
(b) (i) How will you prepare benzoic acid by phenyl cyanide ?
(ii) How will you synthesize soaps by hydrolyser process ?

- (c) How will you synthesize the following from ethyl acetoacetate ?
- Acetone
 - Propanoic acid.
- (d) Explain the reduction of ketone to secondary alcohol by using NaBH_4 with mechanism.

(Section B—Inorganic Chemistry)

4. Solve any *two* of the following : 10
- Explain the role of complex formation in the separation of II A and II B Group radicals.
 - Explain the use of α -Benzoinoxime and 8-hydroxy Quinoline organic reagents in the Qualitative analysis.
 - Explain the role of sodium carbonate extract in qualitative analysis.
 - Water is universal solvent. Explain.
 - Explain the following reactions in liquid sulphur dioxide :
 - Acid-Base
 - Solvation
 - Auto Ionisation.