

This question paper contains 5 printed pages]

**B—52—2019**

**FACULTY OF SCIENCE**

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

**MARCH/APRIL, 2019**

**(CBCS/CGPA Pattern)**

**CHEMISTRY**

**Paper VI**

**(Organic and Inorganic Chemistry)**

**(MCQ & Theory)**

**(Friday, 22-3-2019)**

**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 MCQs Question No. 1.*

**MCQ**

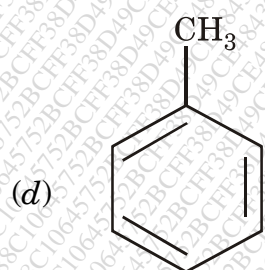
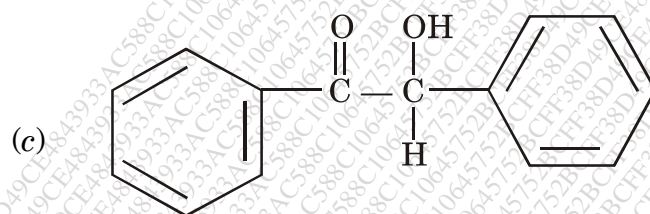
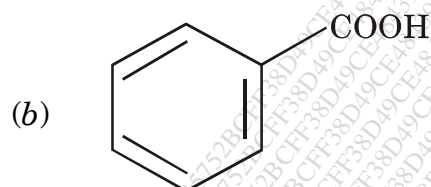
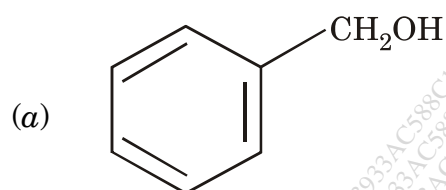
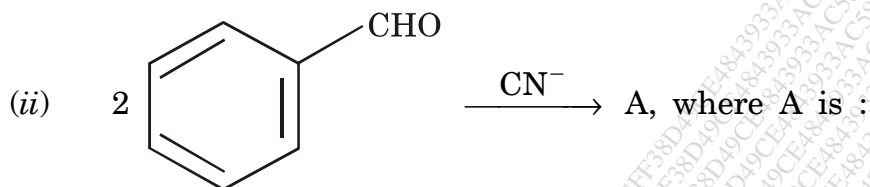
1. Select the *correct* answer for each of the following Multiple Choice Questions : 10

(i) Oppenauer oxidation is reverse process of :

(a) Clemmensen reduction (b) M.P.V. reduction

(c) Perkin's reaction (d) All of these

P.T.O.



(iii) Action of cyanogen chloride on  $\text{CH}_3\text{—Mg—I}$ , gives :

(a) Acetonitrile

(b) Ethanol

(c) Methanamine

(d) Methane

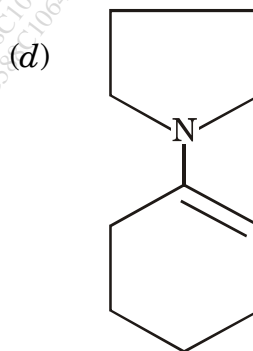
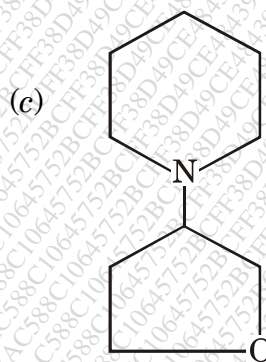
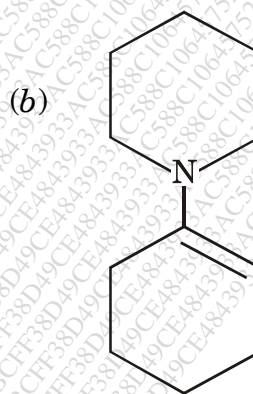
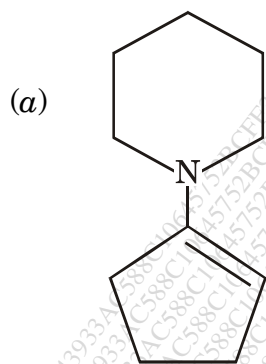
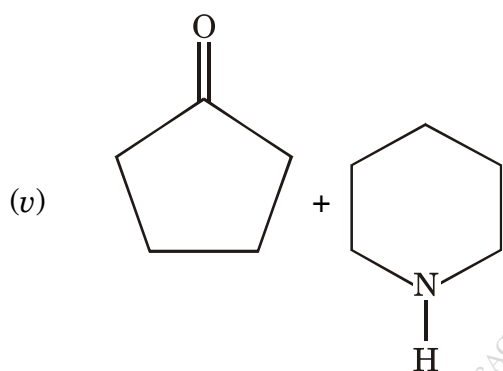
(iv) Action of zinc metal on alkyl halide gives :

(a) Alkyl zinc

(b) Grignard reagent

(c) Dialkyl zinc

(d) Organolithium compounds



(vi) Action of  $PCl_5$  on benzoic acid gives :

(a) Chlorobenzene

(b) Benzyl chloride

(c) Benzene

(d) Benzoyl chloride

P.T.O.

- (vii) Synthetic detergents can be represented by the general formula :
- (a)  $\text{RONa}$  (b)  $\text{ROSO}_3\text{Na}$   
(c)  $\text{RCONa}$  (d)  $\text{RCOOH}$
- (viii) Which of the following is an interfering radical ?
- (a) Fluoride (b) Chloride  
(c) Bromide (d) Iodide
- (ix) ..... reagent is used in separation of IIA and IIB group.
- (a) Dimethyl glyoxime (b) Ammonium sulphide  
(c) Ammonium chloride (d) 8-hydroxy quinoline
- (x) When liquid ammonia get auto ionized, then ..... ions are produced.
- (a)  $\text{NH}_4^+$ ,  $\text{NH}_2^-$  (b)  $\text{NH}^{2+}$ ,  $\text{N}^{3-}$   
(c) Both (a) and (b) (d) None of these

### Theory

#### Section A

#### (Organic Chemistry)

2. Solve any *two* of the following : 10
- (a) Explain Perkin's reaction with mechanism.
- (b) How will you synthesize Anthranilic acid from :
- (1) Phthalimide  
(2) *o*-nitrotoluene.
- (c) What are organolithium compounds ? How will you obtain the following from methyl lithium ?
- (1) Ethanol  
(2) 2-propanol.
- (d) Write notes on the following :
- (1) Saponification value  
(2) Iodine value.

3. Solve any *two* of the following : 10
- (a) Explain Gatterman Koch reaction with mechanism.
  - (b) (i) How will you prepare Phthalic acid from Naphthalene ?  
(ii) Explain cleaning action of soap.
  - (c) Explain clemmensen reduction reaction with mechanism.
  - (d) How will you prepare the following from ethyl acetoacetate ?
    - (i) 4-methyl uracil
    - (ii) Methyl iso-oxazolone
    - (iii) Antipyrine.

### Section B

#### (Inorganic Chemistry)

4. Solve any *two* of the following : 10
- (a) (i) Discuss the role of sodium carbonate in qualitative analysis.  
(ii) Explain water as an universal solvent.
  - (b) What is common ion effect ? Explain the application of common ion effect in separation of IIIA and IIIB group basic radical.
  - (c) Explain the role of the following organic reagents in qualitative analysis :
    - (i) 1, 10-phenanthroline
    - (ii) Dimethyl glyoxime.
  - (d) Explain the classification of solvents with a suitable example.