

This question paper contains 5 printed pages]

**B—46—2019**

**FACULTY OF SCIENCE**

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

**MARCH/APRIL, 2019**

**(CBCS/CGPA Pattern)**

**CHEMISTRY**

**Paper VIII (CCC-IV)**

**(Organic and Inorganic Chemistry)**

**(MCQ & Theory)**

**(Wednesday, 20-3-2019)**

**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-sheets (OMR sheet) for MCQ Question No. 1.*

*(iv) Use black ball point pen to darken the circle of correct choice in OMR sheet.*

*(v) Use only one answer-book for Sections A and B.*

**MCQ**

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

(i) D and L system of Nomenclature is best explained by considering example of :

(a) Acetaldehyde

(b) Glyceraldehyde

(c) Tartaric acid

(d) Formaldehyde

(ii) In Bromo-Chloro Iodomethane, sequence priority order is :

(a) Br > Cl > I > H

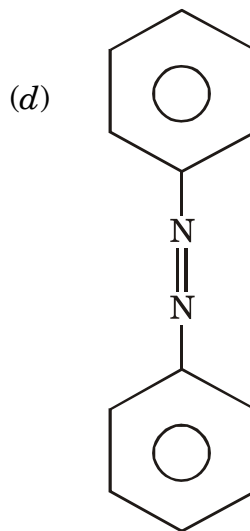
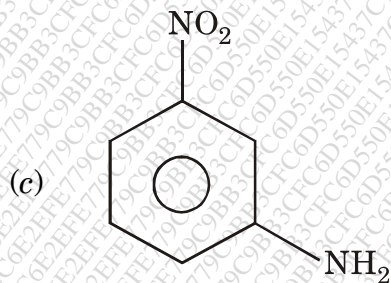
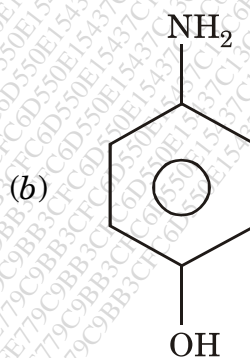
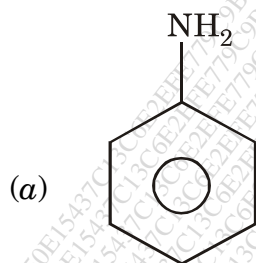
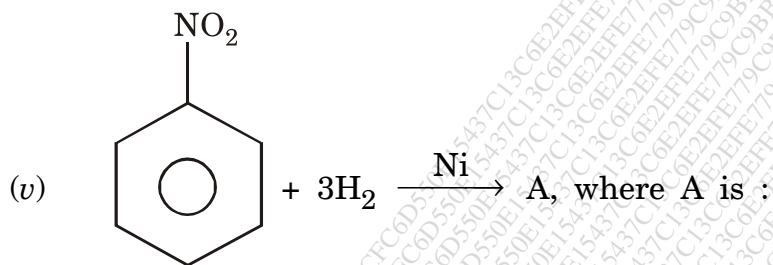
(b) Cl > Br > I > H

(c) I > Br > Cl > H

(d) I > Cl > Br > H

P.T.O.

- (iii) Sugarcane is mainly used for the manufacture of :
- (a) Sucrose (b) Starch  
(c) Lactic acid (d) Cellulose
- (iv) Pyranose structure of glucose is ..... membered ring.
- (a) 3 (b) 4  
(c) 5 (d) 6



- (vi) Nitrobenzene is ..... in colour.
- (a) Pale green (b) Pale blue  
(c) Brown (d) Pale yellow
- (vii) Oxidation of reactive methylene group is converted into ..... group using  $\text{SeO}_2$ .
- (a) Acid (b) Carbonyl  
(c) Amine (d) Cyanide
- (viii) The oxidation state of Pt in  $\text{H}_2[\text{PtCl}_6]$  is :
- (a) IV (b) II  
(c) III (d) I
- (ix) Which of the following ions is colourless ?
- (a)  $\text{Lu}^{+3}$  (b)  $\text{Na}^{+4}$   
(c)  $\text{La}^{+3}$  (d) All of these
- (x) Which of the following is *not* radioactive ?
- (a) Np (b) Eu  
(c) Bk (d) Cm

### Theory

#### Section A

#### (Organic Chemistry)

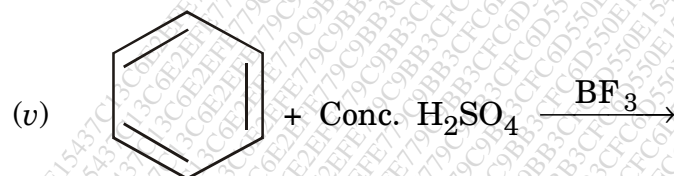
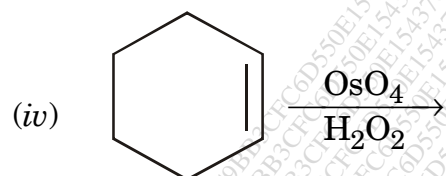
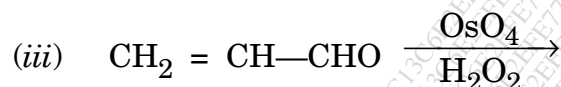
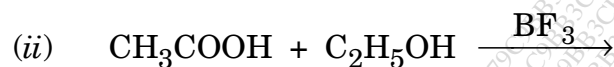
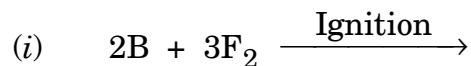
2. Answer any *two* of the following :

- (a) Define the following terms :
- (i) Resolution  
(ii) Racemisation  
(iii) Functional isomerism  
(iv) Center of symmetry  
(v) Dextro isomer.

P.T.O.

- (b) How will you convert arabinose to glucose ?
- (c) How will you prepare Urea by Wohler's method ? What is the action of the following on Urea ?
- (i) Heat
  - (ii) Nitrous acid
  - (iii) Acetyl chloride
  - (iv) Thionyl chloride.
- (d) How will you prepare ozone ? What is the action of ozone on Allyl alcohol and 2-Butene ?
3. Answer any *two* of the following :
- (a) What is stereoisomerism ? Give E and Z forms of :
- (i) 2-Pentene
  - (ii) Benzaldoxime.
- (b) What is the action of the following on glucose ?
- (i) HCN
  - (ii)  $\text{Br}_2/\text{H}_2\text{O}$
  - (iii)  $\text{NaBH}_4$
  - (iv) Conc.  $\text{HNO}_3$
  - (v) HI and red P.
- (c) How will you convert :
- (i) Phenol into aniline
  - (ii) Chlorobenzene into aniline
  - (iii) Diazomethane into methyl chloride
  - (iv) Aniline into N, N-diphenyl thiourea
  - (v) Aniline into phenyl isocyanide.

(d) Predict the products :



### Section B

#### (Inorganic Chemistry)

4. Answer any *two* of the following :

(a) Write the electronic configuration of Lanthanides.

(b) Compare the properties of 'd' block elements with 'f' block elements.

(c) Explain complex compounds and organometallic compounds of Pd.

(d) (i) Write a short note on magnetic properties of Lanthanides.

(ii) Give the chemical formulae of Wilkinson's catalyst and Vsaka compound.