

# NORTH-EASTERN HILL UNIVERSITY

## Department of Chemistry

### Answer-sheet for M.Sc (Chemistry) Entrance Test

Name.....Roll No.....Booklet No: .....

.....  
*Student's signature with date*

.....  
*Invigilator's signature with date*

**Note:** (i) Write your name, Roll No. and Booklet No (of the question) in the space provided above; (ii) Put your signature on this sheet in presence of invigilator; (iii) Your test booklet contains 50 MCQ questions with four choices. Please check that the booklet contains all the pages, otherwise report it to the invigilator immediately; (iv) Choose **only one choice** (A, B, C or D) and mark it clearly in the space given against each question by ball point pen, **do NOT use pencil**; (v) Each correct answer gives 1 marks to your credit, while 0.25 marks will be deducted for each wrong entry; (vi) **Illegible entry, overwriting and/or multiple entry against any question will be treated as wrong answer**; (vii) Extra sheets are provided at the end of the question paper for rough calculations and no rough work should be done on this sheet; (viii) **Calculator**, mobile phone and other electronic devices **are not allowed** inside the examination hall (ix) For any doubt/clarification, consult with the invigilator(s).

Q. No.	Choice								
1		11		21		31		41	
2		12		22		32		42	
3		13		23		33		43	
4		14		24		34		44	
5		15		25		35		45	
6		16		26		36		46	
7		17		27		37		47	
8		18		28		38		48	
9		19		29		39		49	
10		20		30		40		50	

-----Do not write anything below this line-----

	Correct (X)	Wrong (Y)	Not Answered (Z)	Total (X+Y+Z)
Entries				
Marks	$X \times (+1) = P$	$Y \times (-0.25) = Q$		$P + Q$

Examiner's Signature &  
Date

Date: .....

M.Sc. Admission Test

Max. Marks: 50 Time: 120 Minutes

- Note:
- Write your Roll No. in the space provided above of this question paper (below the Booklet No.).
  - Check that this booklet contains all the pages; otherwise report it to the invigilator immediately
  - Extra sheets are provided at the end of this test booklet for rough calculations
  - Hand over both the test booklet and your answer sheet to the invigilator at the end of the examination.

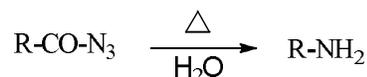
## 1. Strong field ligands

- [A] usually produce high spin complexes and small crystal field splittings.  
 [B] usually produce low spin complexes and small crystal field splittings.  
 [C] usually produce low spin complexes and high crystal field splittings.  
 [D] usually produce high spin complexes and high crystal field splittings.

2. The IUPAC name for the complex  $[\text{Co}(\text{en})_2\text{Cl}(\text{ONO})]^+$  is

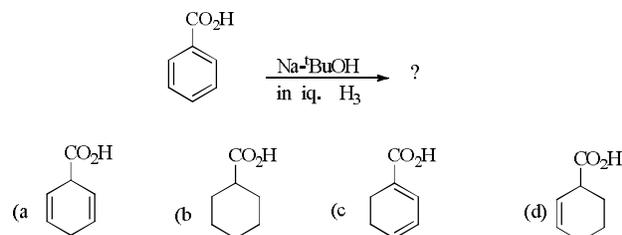
- [A] Cobalt diethylenediaminechlorantrate  
 [B] Chlorodiethylenediaminenitrito cobalt(II)  
 [C] Chloronitritodiethylenediamine cobalt(III)  
 [D] Chlorobis(ethylenediamine)nitrito cobalt(III)

## 3. The conversion below is an example of-



- [A] Hofmann rearrangement                      [B] Lossen rearrangement  
 [C] Beckmann rearrangement                  [D] Curtius rearrangement

## 4. Predict the product of the following reaction



## 5. In the van der Waal's equation of state for a non-ideal gas, the term that accounts for intermolecular forces is,

- [A]  $(V-b)$                       [B]  $RT$                       [C]  $(P + a/V^2)$                       [D]  $(RT)^{-1}$

## 6. The dimensions for the rate constant for a reaction of 'n'th order is expressed as

- [A]  $(\text{mol L}^{-1})^{n-1} \text{ s}^{-1}$                       [B]  $(\text{mol L}^{-1})^{n-2} \text{ s}$                       [C]  $(\text{mol L}^{-1})^{1-n} \text{ s}^{-1}$                       [D]  $(\text{L mol}^{-1})^{-1} \text{ s}^{1-n}$