

BLDE Association's  
**S. B. Arts & K.C.P. Science College,**  
**Vijayapur - 586 103**

(Accredited at the B++ Grade with 2.99 CGPA in 4<sup>th</sup> cycle by NAAC)



Msc chemistry Programme

**Internal Assessment Test Booklet**

First Semester 2021

Name : Priyanka. M. Bushetti

Roll No. : 01 R.C.U. Exam Seat No. P15KM 23SQ32004

Subject Code : \_\_\_\_\_

Subject : Organic chemistry



B.L.D. E. Association's

**S. B. ARTS & K. C. P. SCIENCE COLLEGE,  
VIJAYAPUR**

Name of the Student : Priyanka M. Bushetti

Roll No. : 01 R.C.U. Seat No. : P15KM22S0232004

Subject Code No. : \_\_\_\_\_

Subject. : Organic chemistry

| Test                         | Maximum Marks | Marks Obtained |
|------------------------------|---------------|----------------|
| First Test                   | 20            | 18             |
| Second Test                  | 40            | 36             |
| Third Test                   |               |                |
| Total<br>(Two best of three) |               |                |

  
Signature of  
Faculty

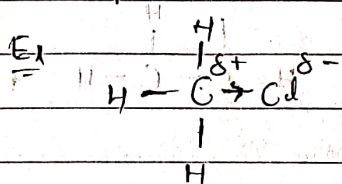
  
Signature of  
Co-Ordinator

  
Signature of  
Principal



## Part A

- a) Inductive effect - The polarity arise in the molecule when more electronegative atom is attached to the carbon or less electro atom in the molecule is called as inductive effect.

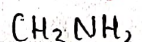
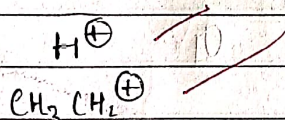


In The chloro methane the chlorine is more electro negative than the carbon atom & hence the electron density slightly move towards the the chlorine & partial charge or polarity arised.

b)

Electrophile

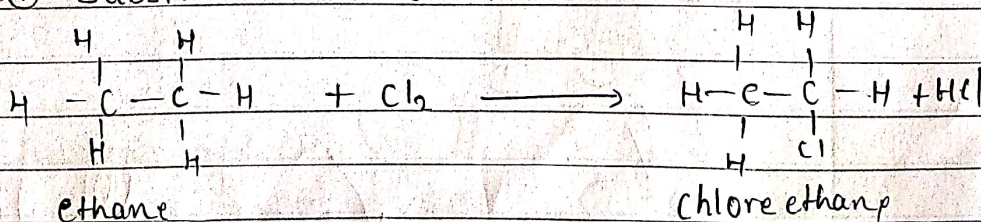
Nucleophile



c)

Types of Reaction

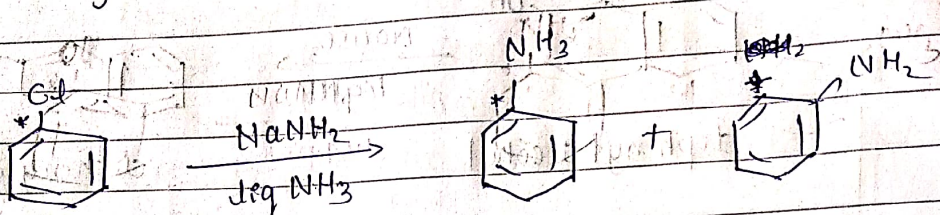
Expt 1 ① substitution Reaction



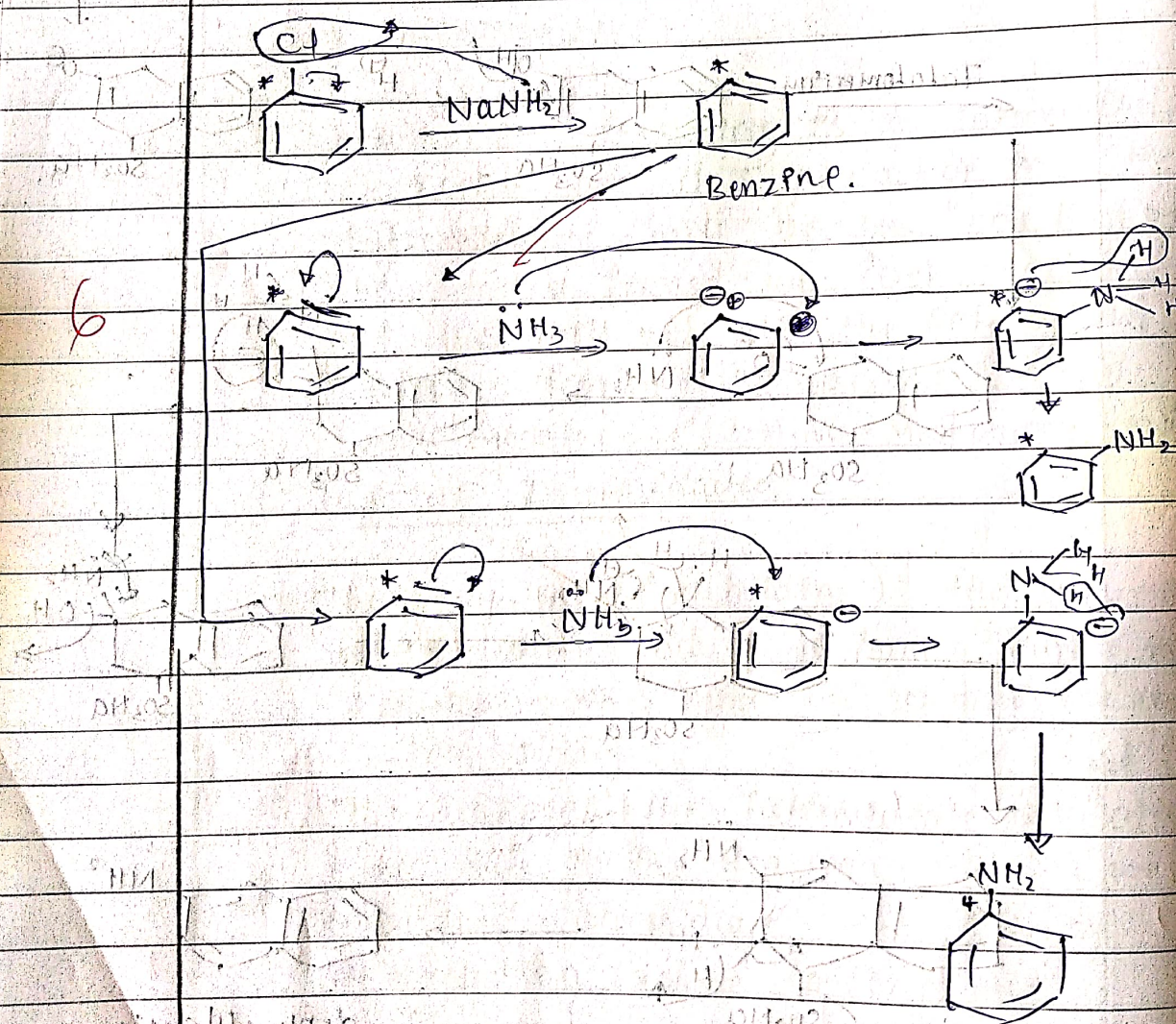
②



## Benzene Mechanism



when chloro Benzen reacts with sodamide and liquid ammonia there formation Benzyne intermediate and formation of the Para & Orth substituted Benzamine.





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\_\_\_\_\_ Programme

Internl Assessment Test Booklet

\_\_\_\_\_ 3<sup>rd</sup>

Semester 2023-24

Name : Danamma, P. Shiregoor

Roll No : 05 R.C.U. Exam Seat No. \_\_\_\_\_

Subject Code : \_\_\_\_\_

Subject : Organic chemistry



B.L.D.E. Association's

**S. B. ARTS & K. C. P. SCIENCE COLLEGE,  
VIJAYAPUR**

Name of the Student : Danamma P. Shiraguri

Roll No. : 05 R.C.U. Seat No. : \_\_\_\_\_

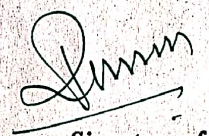
Subject Code No. : \_\_\_\_\_

Subject. : Organic Chemistry

| Test                         | Maximum Marks | Marks Obtained |
|------------------------------|---------------|----------------|
| First Test                   | 20            | 20             |
| Second Test                  | 20            | 19             |
| Third Test                   |               |                |
| Total<br>(Two best of three) |               |                |

  
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Co-Ordinator

  
Signature of  
Principal



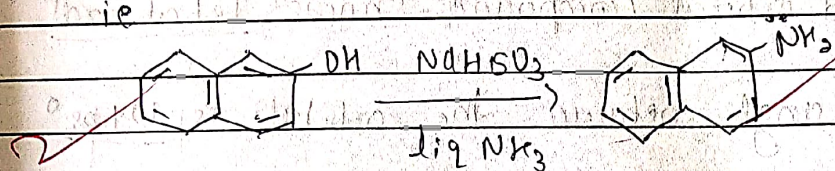
## PART - I

2) Electrophiles -  $H^+$ ,  $HCCH_2^+$

2 Nucleophiles -  $BH_3$ ,  $OH^-$ ,  $Cl^-$ ,  $CH_3NH_2$ ,  $H_2O$

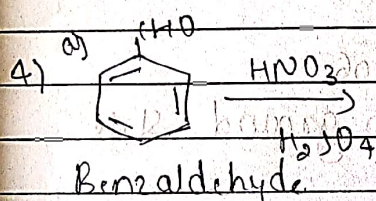
### 3) Bucher reaction

The conversion of  $\beta$ -naphthol into  $\beta$ -naphthylamine in presence of sodium bisulphate and liq  $NH_3$ .



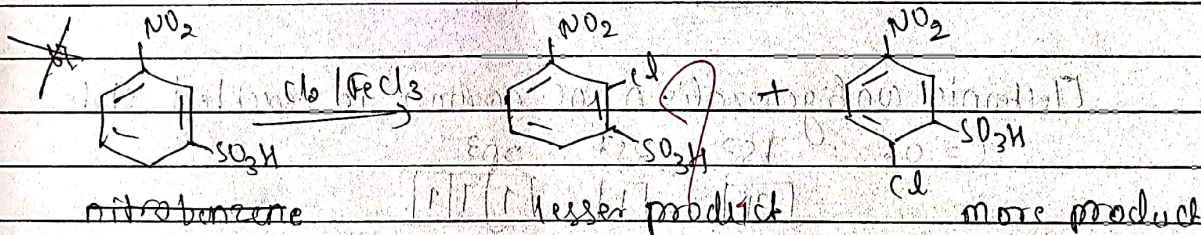
$\beta$ -naphthol

$\beta$ -naphthylamine



Benzaldehyde

m-nitrobenzaldehyde



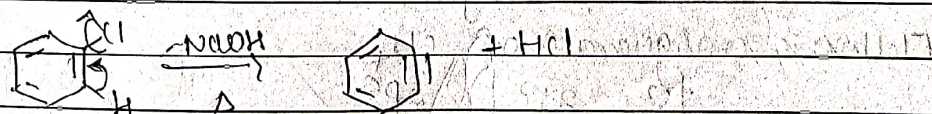
nitrobenzene

less product

more product

### 01) Generation of benzyne

From chlorobenzene



Benzyne

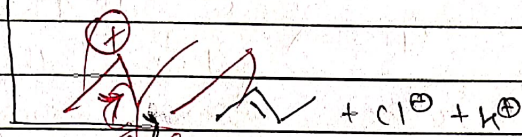
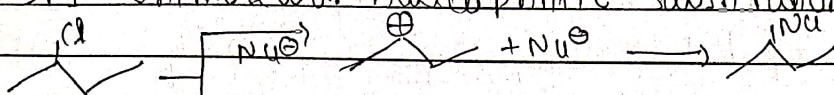


Extra  
09

SN1 vs E1

E1 - unimolecular elimination reaction

SN1 - unimolecular nucleophilic substitution reaction



E1 elimination reaction

\* In SN1 reaction is exothermic reaction while E1 is an endothermic

3. \* In both the reactions solvent used is polar protic solvent  
\* Nucleophilic addition reaction forms different nucleophilic substituted compound while Elimination reaction forms alkenes / unsaturated compounds.

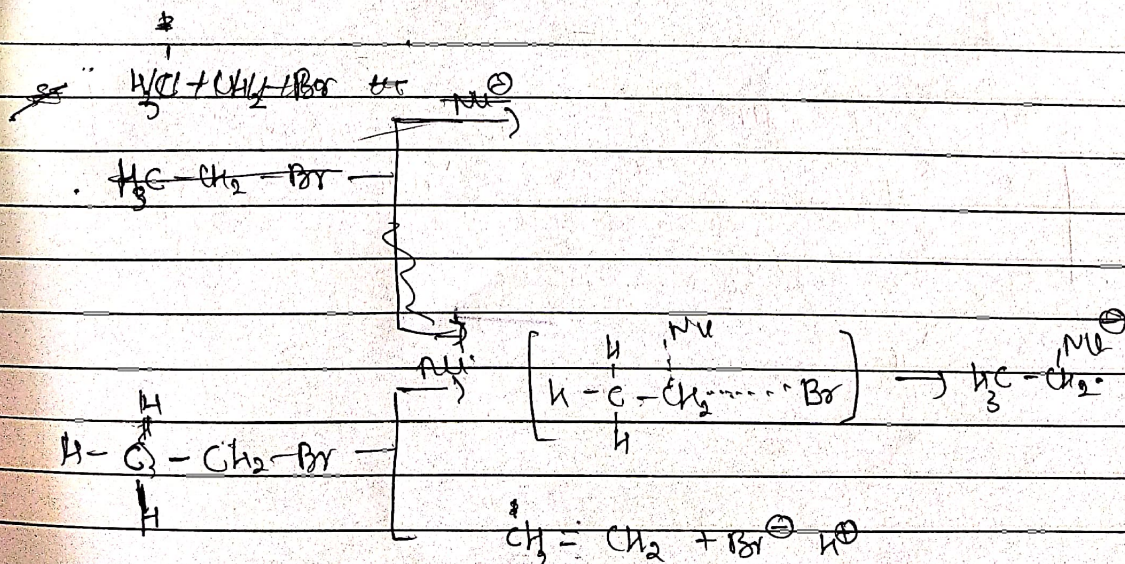
\* Both the reaction involves in 2 step mechanism

\* In both 1st step is Rate determining step.

SN2 vs E2

SN2 - Bimolecular nucleophilic substitution reaction

E2 - Bimolecular elimination reaction.





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M.S.C Programme

### Internal Assessment Test Booklet

MSC-II<sup>nd</sup> Semester 2023-2024

Name : Afreen. M. Dakhani

Roll No. : 1 R.C.U. Exam Seat No. \_\_\_\_\_

Subject Code : \_\_\_\_\_

Subject : Inorganic



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Name : Afreen. M. Dakhani

Roll No. : 1 R.C.U. Exam Seat No. \_\_\_\_\_

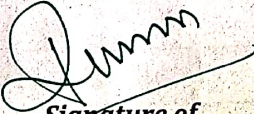
Subject Code : \_\_\_\_\_

Subject : Inorganic

| Test                         | Maximum Marks | Marks Obtained |
|------------------------------|---------------|----------------|
| First Test                   | 20            | 20             |
| Second Test                  | 40            | 38             |
| Third Test                   |               |                |
| Total<br>(Two best of three) |               |                |

  
Signature of  
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Signature of  
Co-Ordinator

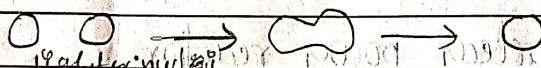
  
Signature of  
Principal



## 1st - Internal test

Q.no.1

- (a) Two lighter nuclei <sup>atoms</sup> fuse together to form a heavy nucleus. This process is called as fusion reaction.
- For nuclear fusion, the lighter nuclei atom should have atomic no less than 50.
- ex 1)  ${}^1_1\text{H} + {}^1_1\text{H} \longrightarrow {}^2_1\text{H} + {}^0_1\text{e}$
- 2)  ${}^2_1\text{H} + {}^2_1\text{H} \longrightarrow {}^4_2\text{He} + \text{Energy}$

- (b) Expression for half life period.
- 

$$t_{1/2} = \frac{0.693}{\lambda}$$

where,  $t_{1/2}$  = half life time to decay  
 $\lambda$  = decay constant

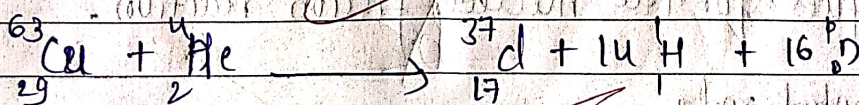
Q.no. II

- (a) Spallation reaction

⇒ The nuclear reaction in which the high energy particle (mostly neutron) to a target nucleus then, the target nucleus will undergo ~~yes~~ splitting. This process is called spallation reaction.

- In this reaction, the production of nucleons takes place

ex Fermentation of <sup>63</sup>Cu



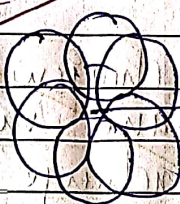
- (b) Nuclear fission reaction
- ⇒ The nuclear process in which the heavy nuclei of atom splits into 2 lighter nuclei by releasing large amount of heat energy is called nuclear fission reaction



## II<sup>nd</sup> Internal test

PART A)

- (a) In 2D close packing, by placing the <sup>sphere of</sup> second row at the depression point of first row spheres, then in the crystal, one sphere will have 6 co-ordination no. i.e. it has 6 neighbouring spheres. The formed void is called octahedral void.



⇒ By placing 1 layer above the 1<sup>st</sup> row a void is created is known as octahedral void.

$$c) \quad \begin{aligned} \text{Na}^+ &= 0.97 \text{ \AA} & r_+ &= 0.97 \text{ \AA} \\ \text{Cl}^- &= 2.51 \text{ \AA} & r_- &= 2.51 \text{ \AA} \end{aligned}$$

$$\frac{r_+}{r_-} = \frac{0.97 \times 10^{-10}}{2.51 \times 10^{-10}} = 0.386$$

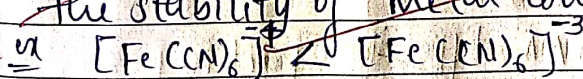
0.386 value lies between 0.225 - 0.414 radius ratio of NaCl.

∴ it probably has NaCl form.

- (a) 2 factors affecting stability of metal complex.

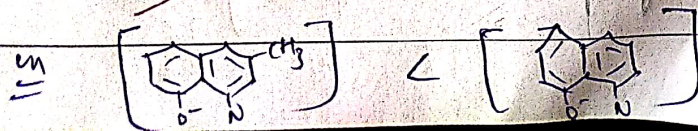
1) charge on central metal ion.

- If charge on central metal ion is more, then the stability of metal complex will be more.



2) steric hindrance.

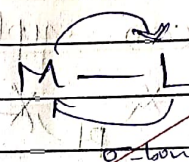
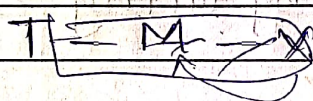
If there is steric hindrance in the complex, due to bulky mes, the stab complex will be less stable.



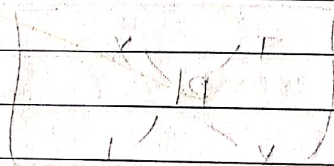


As  $\pi$  has more polarization it induces dipole in metal. The +ve pole of metal ion attracted strongly by -ve pole of  $\pi$  ligand. Then the -ve pole of metal ion at another side will get repel by  $\pi$  ligand. Hence the M-X bond become weak & it can be broken easily. & the incoming ligand can attack at that position.

## 2) $\pi$ -bonding theory,



According to this theory, first the ligand will donate a pair of  $e^-$  to the  $d$ -orbital of central metal ion. Then the  $e^-$  density on metal ion increases. Hence, it will donate back the pair of  $e^-$  to the empty  $\pi^*$  orbital of ligand form  $\pi$ -bond. This effect is called as synergic effect.





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MSc. Chemistry Programme

**Internal Assessment Test Booklet**

4<sup>th</sup>

Semester 2023-24

Name : Sahebagoud. B. Kumtagi

Roll No. : \_\_\_\_\_ R.C.U. Exam Seat No. PISKM22503 2003

Subject Code : \_\_\_\_\_

Subject : Organic Chemistry



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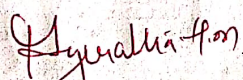
Name : Sabebagoud. B. Kumatagi

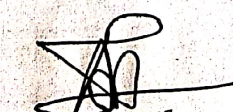
Roll No. : \_\_\_\_\_ R.C.U. Exam Seat No. P15KM225032000

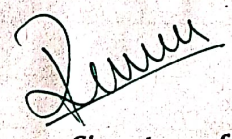
Subject Code : \_\_\_\_\_

Subject : Organic Chemistry

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## Part-A

①

② Synthons :-

Synthons are the ions i.e. cations and anions which are obtained when the given molecule is disconnected to get starting materials in retrosynthetic analysis.

Synthetic Equivalents :-

Example

These are the compounds or molecules which carries out the functions of synthons & which are available, & are also called starting materials.

③

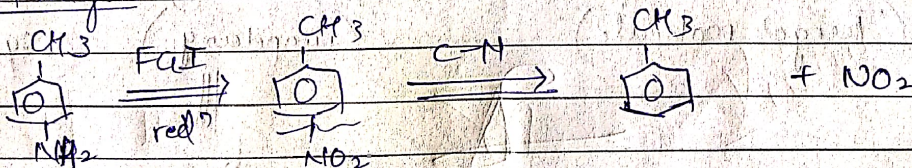
FGI

It is a functional group interconversion.  
→ Conversion of one functional group to other functional group is called FGI.  
\* This will help to get target molecule.

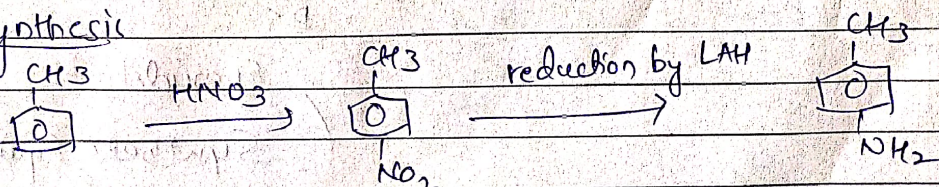


→ Here with respect to  $\text{CH}_3$ ,  $\text{NH}_2$  is difficult to add to benzene ring directly during synthesis. ∴ We apply FGI to convert  $\text{NH}_2$  to  $\text{NO}_2$ .

Analysis



Synthesis





2M Part - A

c) Protection of -OH group

Protection of -OH by  $\text{OH OH}$  i.e. 1,2 diol

