

**Pramukh Swami Science and H D Patel Arts College**  
**Bachelor of Vocation**  
**Pharmaceutical Chemistry Semester III**  
**Mid SEM Examination, November 2015**  
**Subject: PC311 (Advanced Organic Chemistry)**

Time: 2 hrs

Date: 02/11/2015

Marks: 60

**Q.1 Answer any 12 questions. Each question carries 1 mark.**

**[12\*1=12]**

1. Write down whether the following statement is True/false:  
Electron withdrawing group have acid strengthening property.
2. Give the examples of groups possessing +I effect.
3. An electron releasing group(+I effect) \_\_\_\_\_ basicity.
4. Comment: As increase in inductive effect of halogen atom, bond length decreases.
5. Write down whether the following statement is True/false:  
Aromatic amines are weaker bases than aliphatic amines..
6.  $\text{OH}^-$  is more nucleophilic than water.Explain.
7. With strong base,  $3^\circ$  Haloalkane undergo \_\_\_\_\_ reactions.
8. Define: Nucleophile with examples.
9. Comment: polar protic solvent increases rate of  $\text{SN}_1$  reaction.
10. Indicate which one is more nucleophilic among following pair:
  - 1)  $\text{F}^-$ ,  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{I}^-$
  - 2)  $\text{CH}_3\text{SH}$  &  $\text{CH}_3\text{OH}$
11.  $1^\circ$  Haloalkane will follow \_\_\_\_\_ nucleophilic substitution mechanism.
12. Of the following pair of anions,indicate which one will be a stronger nucleophile and why?  
 $\text{CH}_3\text{O}^-$  &  $\text{CH}_3\text{S}^-$
13. Define:polar protic solvent & polar aprotic solvent.

**Q.2 Answer any 5 questions. Each question carries 04 marks**

**[5\*4=20]**

1. Explain  $-I$  &  $+I$  effect..
2. Explain sacrificial and isovalent hyperconjugation in detail with examples.
3. Explain  $\text{E}_1$  mechanism with example.
4. Write down difference between  $\text{E}_1$  &  $\text{E}_2$  mechanism.
5. Write down the reaction of ethylchloride with sodium hydroxide. Which product/s is/are formed? Explain with mechanism.
6. Explain stereochemistry of  $\text{SN}_1$  or  $\text{SN}_2$  reaction with example.

**Q.3 Answer any 4 questions. Each question carries 07 marks**

**[4\*7=28]**

1. Explain SN 1 reaction with mechanism & examples.
2. Explain benzyne mechanism with example.(elimination-addition mechanism).
3. Write down difference between SN<sub>1</sub> & SN<sub>2</sub> mechanism.
4. Write a note on resonance effect.
5. Enlist various factors affecting inductive effect and Explain any two in detail.

*Best of Luck*