

Govt .College For Women Parade Ground, Jammu

B.SC Sem-1<sup>st</sup>

Course No:UCHTC-101

Max Marks=80

Time allowed=3 hrs.

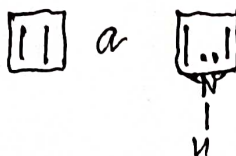
Section-A

**Note:** Answers all questions. Each question carries 3 marks.

Q.1 What is Markownikov's rule?

Q.2 Distinguish between cis and trans isomers? Why b.pt. of cis and m.pt. of trans isomeris high?

Q.3 What is Huckel's rule Predict which is aromatic



Q.4 Calculate the bond order of CO.

Q.5 Write a short note on exchange energy.

Section-B

**Note:** Answers all questions. Each question carries 7 marks.

Q.6 What are quantum numbers? Discuss quantum number with example.

Q.7 Define Electro negativity. Discuss Pauling scale for the determination of Percentage ionic character from electronegativity.

Q.8 Draw chair boat forms of cyclohexane. Why chair form is more stable than boat form of cyclohexane?

Q.9 What are carbocations? Discuss their shape, methods for preparation and stability order.

Q.10 Give the general characteristics of ionic compounds and covalent compounds.

Section-C

**Note:** Answers any Two questions. Each question carries 15 marks.

Q.11 a) Distinguish between diastereomers and enantiomers.

b) Discuss the mechanism of halogenations of alkane. Give evidences of mechanism and also draw energy profile diagram for it.

Q.12 a) Define resonance. Give characteristics of resonance.

b) State and explain Fajan's rule.

Q.13. a) Derive Schrodinger wave equation and give its significance.

b) Write down the electronic configuration of Ag, Cu,  $C_o^{+3}$ ,  $C_r^{+1}$ ,  $Fe^{+3}$

Q.14 a) Discuss the structure of  $XeF_4$  on the basis of VSEPR Theory.

b) What is Born Haber's cycle. Give its significance.

Q.15 Predict the product and suggest a mechanism:

