

**ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.**

Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.**Q.1. Encircle the correct choice.****(1x10=10)**

- i. Which version of radical halogenation of alkanes is most selective?
- a) Fluorination b) Chlorination
c) Bromination d) Iodination
- ii. Which one of the following statements regarding free radicals is false?
- a) Free radical carry a single, unpaired electron
b) Free radicals are product as a result of hemolytic cleavage of covalent bond
c) Free radical don't occur naturally in body
d) A free radical can interact with a molecule to generate a new free radical species
- iii. Catalytic reduction of $\text{Ph}-\text{CH}(\text{OH})-\text{CO}_2\text{H}$ gives
- a) $\text{Ph}-\text{CH}(\text{OH})-\text{CHO}$ c) $\text{Ph}-\text{CH}(\text{CHO})-\text{CO}_2\text{H}$
b) $\text{Ph}-\text{CH}_2-\text{COR}$ d) $\text{Ph}-\text{CH}_2-\text{CO}_2\text{H}$
- iv. Aldehydes and ketones can be reduced to
- a) Hydrocarbon b) Alcohols
c) Carboxylic acids d) All of these
- v. Which one of the following is principle chromophore in azo-dyes?
- a) $\text{C}\equiv\text{N}$ b) $\text{N}\equiv\text{N}$
c) $\text{N}=\text{N}$ d) $\text{C}=\text{N}$
- vi. Which of the following statements is wrong?
- a) Infrared radiation is higher in energy than UV radiation.
b) Infrared spectra record transmission of IR radiation.
c) Molecular vibrations are due to periodic motions in atoms i.e. stretching bending
d) IR spectra give information regarding functional groups in a molecule
- vii. Which of the following wavelength is associated with UV spectroscopy?
- a) 0.8 – 500nm b) 400 – 100nm
c) 380 – 750 nm d) 0.01 – 10nm
- viii. Visible absorptions are _____ than UV.
- a) Weaker b) Stronger
c) Equal d) None of above
- ix. Swern oxidation would convert primary alcohol to
- a) Aldehyde b) Ketone
c) Carboxylic acids d) Alkene
- x) Secondary alcohols on catalytic dehydrogenation by Cu-Ni couple gives
- a) Ketone b) Carboxylic acid
c) Aldehyde d) Amine

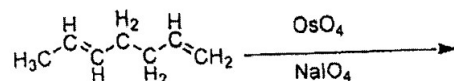


ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Answer the following questions.

(4x5=20)

- Give possible electronic transitions in Ethyl benzoate and Acetaldehyde
- Discuss Birch reduction with suitable example and mechanism.
- Explain why ethylene does not show C=C stretching band while propylene does.
- What is role of free radicals in aging?
- Write product and mechanism of given reaction



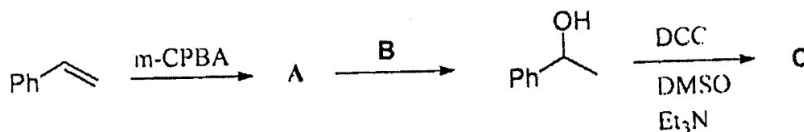
Q.3.

- What a note on Swern oxidation of alcohols? (5)
- Discuss different methods for oxidative cleavage of double bond? (5)

Q.4. Describe sample handling in infrared spectroscopic technique? (10)

Q.5.

- How would you complete these reactions with mechanism? (6)



- Describe briefly hydroboration with mechanism and regeoselectivity? (4)