

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: IMSC
BRANCH: CHEMISTRY

SEMESTER : III
SESSION : MO/2022

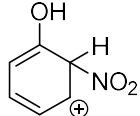
SUBJECT: CH216 ORGANIC CHEMISTRY-II

TIME: 3:00 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Write short note on halogenation of alkene. Remembering + Understanding; CO3 [2]
- Q.1(b) What is the reagent used to synthesize cis alkene and trans alkene as major product from alkyne? Give explanation. Understanding + Applying; CO3, CO4 [3]
- Q.1(c) Discuss the Markonikov and Anti-Markonikov addition to alkene with examples. Remembering + Understanding+ Applying, CO1, CO2 [5]
- Q.2(a) Discuss about polymerization of alkyne. Understanding + Analyzing, CO2 [2]
- Q.2(b) Write short note on oxidation of alkynes. Remembering + Understanding+ Applying, CO1, CO2 [3]
- Q.2(c) Write two methods of preparation of alkyne. Understanding + Analyzing, CO2 [5]
- Q.3(a) Write short note on pinacole-pinacolone rearrangement. Remembering + Applying, CO3 [2]
- Q.3(b) Explain the nucleophilic addition-elimination reactions of ammonia (or its derivative) with aldehyde or ketone. Remembering + Understanding + Applying, CO3, CO4 [3]
- Q.3(c) Discuss about the mechanism of acid catalysed and base catalysed aldol condensation reaction. Remembering + Applying, CO2 [5]
- Q.4(a) Alkyl halides produce mainly cyanides with aqueous ethanolic KCN whereas mainly isocyanides with ethanolic AgCN-Explain. Remembering + Understanding, CO2 [2]
- Q.4(b) Draw the resonating structures of following compounds. Understanding + Analyzing, CO3 [3]
- (i) $\text{CH}_3-\overset{\oplus}{\text{C}}\text{H}-\text{OCH}_3$ (ii) 
- Q.4(c) Draw energy profile diagram for a typical $\text{S}_{\text{N}}1$ reaction. Between $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}$ and $\text{CH}_3\text{OCH}_2\text{Cl}$ which would react faster in $\text{S}_{\text{N}}1$ solvolysis? Explain Remembering + Understanding + Applying, CO3, CO4 [5]
- Q.5(a) Comment on the stereochemistry of E_2 elimination. Understanding + Analyzing, CO1 [2]
- Q.5(b) Discuss about the factors that favours the Hofmann elimination product over Saytzev elimination product. Remembering + Understanding+ Applying, CO1, CO2 [3]
- Q.5(c) Explain the reactivity order of following compounds towards electrophilic aromatic substitution. Remembering + Applying, CO2, CO3 [5]
- Benzene, fluorobenzene, chlorobenzene, bromobenzene, iodobenzene

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