

M.Sc. - I (Chemistry) (NEP Pattern) Semester-II
02MSCCH02 - Paper-VI : Organic Chemistry-II

P. Pages : 2

Time : Three Hours



GUG/W/24/15351

Max. Marks : 80

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1. a) Give the mechanistic and stereochemical aspect of addition reaction involving free radical. 8
b) Explain the mechanism of Benzoin condensation. 8

OR

- c) Using Michael reaction how will you prepare 4
$$\text{CH}_3 - \underset{\text{O}}{\underset{||}{\text{C}}} - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \underset{\text{O}}{\underset{||}{\text{C}}} - \text{CH}_3$$
- d) Write mechanism of Aldol condensation. 4
e) Write note on Hydrogenation of aromatic ring. 4
f) Explain Perkin reaction. 4
2. a) Give the mechanism of Wagner – Meerwein reaction. 8
b) Explain the reactivity for aromatic substrate in free radical substitution reaction. 8

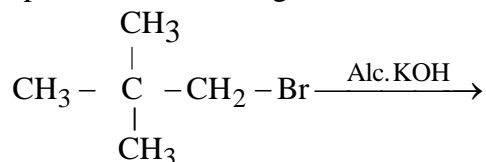
OR

- c) Give the product of following reaction. 4
i) $\text{R} - \underset{\text{O}}{\underset{||}{\text{C}}} - \text{NH}_2 \xrightarrow[\text{H}_2\text{O}]{\text{Br}_2/\text{NaOH}} ?$
ii) $\text{C}_6\text{H}_5 - \underset{\text{O}}{\underset{||}{\text{C}}} - \underset{\text{O}}{\underset{||}{\text{C}}} - \text{C}_6\text{H}_5 \xrightarrow[\text{ii) H}_2\text{O} | \text{H}^+]{\text{i) C}_2\text{H}_5\text{O}^-} ?$
- d) Explain the different types of free radical reaction. 4
e) What is Neighbouring group assistance and give the effect of solvent on reactivity? 4
f) Explain Beckman rearrangement reaction. 4
3. a) Write in details with mechanism of Halogenation at allylic carbon. 8
b) What are the condition that favour EICB mechanism with suitable example? 8

OR

c) Explain Hoffman rule in elimination reaction. 4

d) Write product of following reaction. 4



e) Write note on arylation of aromatic compound by diazonium salt. 4

f) Explain Hunsdiecker reaction. 4

4. a) Give the Green synthesis of 8

i) Styrene ii) Paracetamol

b) What is the role of polymer supported reagents and zeolites in Green chemistry? 8

OR

c) What is need of Green chemistry? 4

d) Write short note on solvent free reaction. 4

e) What are the advantage of using microwave in organic reaction? 4

f) Write short note on nanotube. 4

5. a) Explain the role of leaving group in elimination reaction. 16

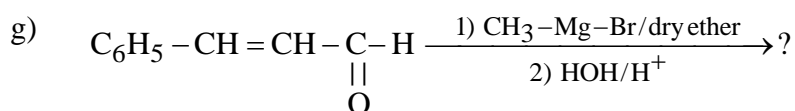
b) Define Auto-oxidation.

c) How do green solvent differ from traditional solvent?

d) Explain atom economy in organic synthesis.

e) Explain Hydrogenation of double bond with suitable example.

f) Give one example of Mannich reaction.



h) Write benzil-benzylic acid rearrangement reaction.
