

P. P. SAVANI UNIVERSITY

Fifth Semester of B.Sc. Examination

December-2021

SSCH3070-Organic Chemistry VI

09.12.2021, Thursday

Time: 12:30 p.m. to 03:00 p.m.

Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

Section-I (Total Marks - 30)

Q.1 Short Questions [10]

1.1 Objectives [05]

- 1.1a In the synthesis of Adipic acid, cyclohexane oxidized by
- A 20% hydrogen peroxide
 - B 30% hydrogen peroxide
 - C 40% hydrogen peroxide
 - D 10% hydrogen peroxide
- 1.1b The household and industrial microwave ovens operate at a fixed frequency of
- A 2.00GHz.
 - B 2.25 GHz.
 - C 2.45 GHz.
 - D None of the above
- 1.1c Which of the following is not a principle of green chemistry
- A Prevention
 - B Atom Economy
 - C Less Hazardous Chemical Synthesis
 - D Use of hazardous chemicals
- 1.1d Which of the following system is used for Hofmann elimination reaction?
- A water-chloroform
 - B water-acetone
 - C water-acetic acid
 - D None of the above
- 1.1e Hydrolysis of Banzamide by microwave assisted reaction gives ___% yield
- A 94%
 - B 99%
 - C 97%
 - D 95%
- 1.1f Hydrolysis of benzyl chloride with water in microwave oven gives 97% yield of benzyl alcohol in _____ min
- A 10 min.
 - B 60 min.
 - C 3 min.
 - D 5 min.

1.1g Saponification of methylbenzoate in aqueous sodium hydroxide under microwave conditions (2.5 min) gives 84% yield of ____

- A Benzaldehyde
- B Benzoyl alcohol
- C Benzene
- D Benzoic acid

1.1h Which of the following catalyst used for fries rearrangement?

- A Chlorobenzene
- B Triethyl
- C Lanthanum bromide
- D None of the above

1.1i Which of the following is used as solvent in Diels Alder reaction?

- A Chlorobenzene
- B Diglyme
- C DMF
- D None of the above

1.1j Decarboxylation of carboxylic acid takes place in presence of _____

- A Diglyme
- B DMF
- C Quinoline
- D Lanthanum bromide

1.2 Answer the Following: (MCQ/Short Question/Fill in the Blanks) [05]

1.2a What is Green Chemistry?

1.2b Why microwave decarboxylation is good over conventional?

1.2c Biosynthesis contain _____ biocatalyst.

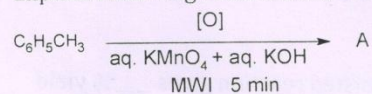
1.2d What is Aliquat 336?

1.2e What is Nazida?

Q.2 Short Notes (Attempt any two) [06]

A Compare traditional and green synthesis of adipic acid.

B Explain following reaction and write the product A:



C Write a short notes on Microwave assisted fries rearrangement.

Q.3 Explain in detail (Attempt any two) [14]

A Give detail account on 12 Principle of Green Chemistry.

B Explain in detail: Microwave assisted hydrolysis reaction.

C Give comparison of conventional heating and microwave heating, also give application of MWI in organic synthesis.

Section-II (Total Marks - 30)

Q.1 Short Questions

[10]

1.1 Objectives

[05]

1.1a Which of the following is not fused Heterocycles?

- A Quinoline
- B Carbazole
- C Indole
- D Pyrazine

1.1b Industrially pyrrole is produce from _____.

- A Furan
- B Thiophene
- C Pyridine
- D Indole

1.1c Bromination of pyrrole gives _____ substituted derivative.

- A Mono
- B Di
- C Tri
- D Tetra

1.1d Maleimide is a derivative of _____.

- A Furan
- B Thiophene
- C Pyridine
- D Pyrrole

1.1e Which of the following is not correct for Thiophene?

- A colorless liquid
- B smells like benzene
- C soluble in alcohol
- D None of above

1.1f THF is _____ product.

- A Oxidized
- B Reduced
- C Substituted
- D Adduct

1.1g Bromination of Indole is occurred at _____ temperature.

- A Low
- B High
- C Room
- D Extreme High

1.1h The electrophilic substitution in Quinoline takes place more readily at _____.

- A 5 and 7
- B 5 and 8
- C 4 and 7
- D 4 and 8

1.1i Nitration of Isoquinoline give _____ substituted derivative as major product.

- A 4

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