

Exam Date & Time: 15-Jul-2022 (09:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

VI SEMESTER B.TECH END SEMESTER MAKE UP EXAMINATIONS, JULY 2022

CHEMISTRY OF CARBON COMPOUND [CHM 4052]

Marks: 50

Duration: 180 mins.

A

Answer all the questions.

Instructions to Candidates: Answer ALL questions Missing data may be suitably assumed

- 1) Explain the mechanism of SN1 reaction in detail. Discuss any three factors which affect SN1 reaction (4)
 - A)
 - B) Define Markovnikov's rule. Differentiate E1 and E2 reactions (3)
 - C) What is Hoffman rearrangement. Explain its mechanism by taking a suitable example (3)
- 2) Why pyrrole preferably undergoes electrophilic substitution reaction at 2nd position? Explain the different classes of alcohols with examples for each (4)
 - A)
 - B) Explain the IUPAC nomenclature system of naming organic compounds (3)
 - C) Explain the step-wise mechanism for the bromination of nitrobenzene (3)
- 3) What are heterocyclic compounds? Explain the property of aromaticity in pyrrole and furan (4)
 - A)
 - B) Describe the mechanism of aldol condensation reaction by taking acetaldehyde as starting material (3)
 - C) What are Grignard reagents? Explain their general properties and write any two reactions (3)
- 4) Explain the synthesis, reactivity and applications of thiophene (4)
 - A)

- B) What are carbonyl compounds? How do you distinguish aldehydes and ketones practically? (3)
- C) Explain the three different types of strain which contribute to ring strain in cycloalkanes by discussing suitable examples for each (3)
- 5) What are SWNT and MWNT? Explain the synthesis and properties of nanotubes (4)
- A) (3)
- B) Explain the classification and nomenclature of carboxylic acids (3)
- C) Describe the biomedical and energy storage applications of carbon nanomaterials (3)

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