

Reg.No. _____



Karunya UNIVERSITY

(Karunya Institute of Technology & Sciences)
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

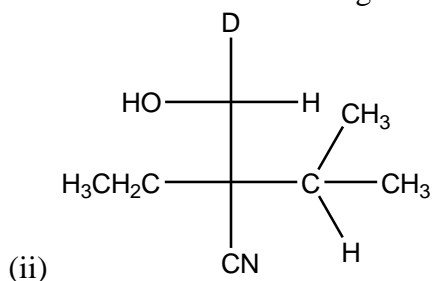
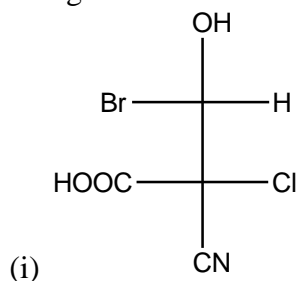
End Semester Examination – Nov/Dec – 2016

Code : 15CH3003
Sub. Name : Organic reaction mechanism and stereochemistry

Semester : 2016-17 ODD
Duration : 3hrs
Max. marks : 100

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

| Q. No. | Sub Div. | Questions | Course Outcome | Marks |
|-------------|----------|--------------------------------------------------------------------------------------------------------------------------|----------------|-----------|
| 1. | a. | Comment on the statement “Electronic effects decide the direction of an organic reaction” | CO1 | 10 |
| | b. | Explain the salient features of Inductive effect and Hyperconjugative effect with examples? | CO1 | (5+5) |
| (OR) | | | | |
| 2. | a. | What are ‘Nitrenes’? Discuss their generation and characteristic reactions? | CO1 | (3+5+5) |
| | b. | Explain the important reactions of carbene? | CO1 | 7 |
| 3. | a. | What are Beta Eliminations? Give an example? | CO1 | 5 |
| | b. | Discuss the different mechanism by which Beta Elimination operate? | CO1 | 10 |
| | c. | Explain the structure of a carbene? | CO1 | 5 |
| (OR) | | | | |
| 4. | a. | Discuss in detail the various parameters that affect the rate of SN2 reactions? | CO1 | 10 |
| | b. | What are ‘Syn’ and ‘Anti’ additions? Give specific examples. | CO1 | (5+5) |
| 5. | a. | Explain the Arenium ion mechanism of substitution and compare it with the Meisenheimer complex mechanism? | CO1 | 10 |
| | b. | How are carbonium ions generated? Discuss their important reactions? | CO1 | (5+5) |
| (OR) | | | | |
| 6. | a. | What is an SE2 mechanism? Give an example. | CO1 | 5 |
| | b. | Elaborate the mechanism of nucleophilic addition reactions and electrophilic addition reactions using suitable examples? | CO1 | (7.5+7.5) |
| 7. | a. | Write short notes on (i) Cahn-Ingold prolog’s rule. (ii) Conformations of cyclohexanes. | CO1 | (7.5+7.5) |
| | b. | Assign R/S notation to the chiral centres in the following | CO1 | 5 |

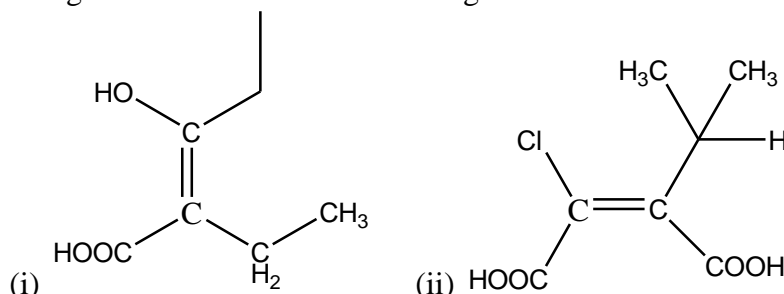


(OR)

8. a. Assign E/Z notation to the following

CO1

4



- b. What is chirality? Give examples.

CO1

4

- c. Illustrate a D/L isomer and a R/S isomer with proper reasoning?

CO1

6

- d. Differentiate configuration and conformation with suitable examples? Which is the stable conformation of cyclohexane and why?

CO1

(3+3)

Compulsory:

9. a. What are ylids? How are they generated? Give their characteristic reactions?

CO1

(2+4+4)

- b. State Hofmann and Zaitsev's rule? Discuss the factors that favour Zaitsev product and Hofmann product?

CO1

(4+6)