Reg. No ..... Name ..... **17P119**

**MSc DEGREE END SEMESTER EXAMINATION- NOVEMBER 2017**

**SEMESTER 1 : CHEMISTRY / PHARMACEUTICAL CHEMISTRY**

COURSE : **16P1CHET02 / 16P1CPHT02 ; BASIC ORGANIC CHEMISTRY**

***(Common for Regular - 2017 / Supplementary - 2016 Admissions)***

Time : Three Hours Max. Marks: 75

**Section A**

**Answer any 10 (2 marks each)**

1. Explain Norrish Type I reaction citing an example.
2. Give any one product formed during the photolysis of cyclohexanone.
3. Cyclohexanone reacts faster with HCN than di-n-hexylketone. Why?
4. Draw the stable conformations of cis and trans-4- t-butyl cyclohexanols. Which one is esterified easily?
5. For 3-chloro-2-butanol, threo form is more stable than the erythro form. Explain.
6. Write briefly on the optical activity of cyclophanes.
7. Explain stereospecific and stereoselective reactions with examples.
8. What are Meisenheimer salts?
9. Which of the following is more basic, 2,6-dinitro aniline or 3,5-dinitro aniline? Why?
10. Explain thermodynamic control of a reaction taking a suitable example.
11. What is α-kinetic isotope effect ?
12. What are homoaromatic compounds?
13. Explain alternant and non-alternant hydrocarbons?

**(2 x 10 = 20)**

**Section B**

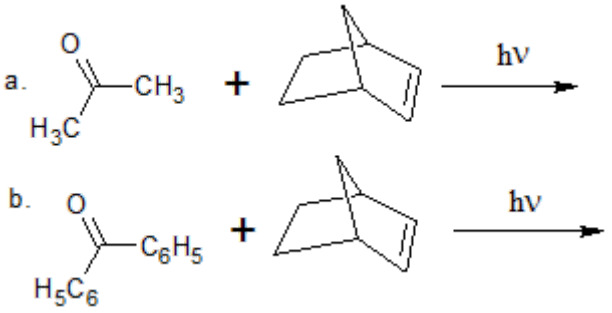
(Answer any 5 questions by attempting not more than 3 questions from each of the following bunches) **(5 marks each)**

**Bunch I** (Short Essay Type)

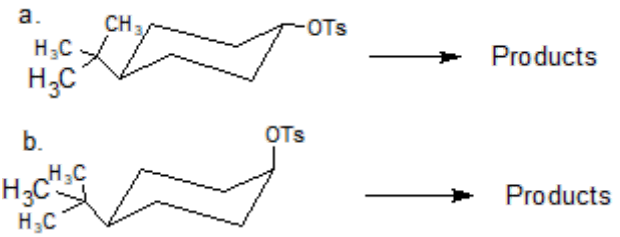
14. Explain the mechanisms of Barton reaction and Di-π-methane rearrangement.
15. Discuss the conformational aspects of esterification of menthol and neoisomenthol.
16. Write briefly on the mechanisms of interconversion of geometrical isomers.
17. Give a brief account of primary kinetic isotope effect taking suitable example.

**Bunch II** (Problem Type)

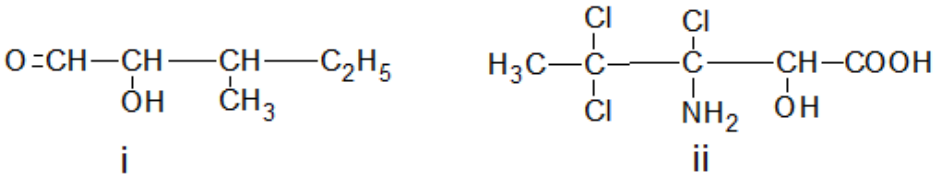
18. Complete the following reactions and explain the theory behind them.




19. Comment on the relative rates of the following reactions . Draw the conformation of the products formed.




20. Draw the Fischer projection formula of 2R, 3S configuration of the following molecules. Rationalise.




21. Derive any one Linear free energy relation and explain the terms involved.

**(5 x 5 = 25)**

**Section C**
**Answer any 2 (15 marks each)**

22. Discuss in detail the effect of conformation on dehydration, dehydrohalogenation and pyrolitic eliminations taking any two examples for each type of reactions.
23. Give a detailed discussion on geometrical isomerism with special emphasis on systems of configurational nomenclature, methods for the determination of configuration and interconversion of geometrical isomers.
24. Explain any five prominent mechanisms of esterification of an acid with suitable examples
25. Give details of synthesis and properties of fullerenes, carbon nano tubes and graphenes?

**(15 x 2 = 30)**