Reg. No……. Name:……. **P417**

MSc DEGREE END SEMESTER EXAMINATION MARCH 2016

SEMESTER – 4 : CHEMISTRY

COURSE: P4CHET14EL: ADVANCED ORGANIC CHEMISTRY

Time: Three Hours Max. Marks: 75

Section-A

*(Answer **any ten** questions. Each question carries **2** marks)*

1. Explain the concept of 'preorganization' and 'reorganization' in relation to molecular recognition.
2. What are cyclophanes? What are the forces involved in the stabilization of cyclophanes?
3. Distinguish between % atom economy and % yield. How is % atom economy calculated?
4. Describe the importance of thiamine catalysed benzoin condensation.
5. What do you mean by 'nano scale'? Explain the bottom-up approach used in nanomaterial synthesis.
6. What are fullerenes? Explain.
7. What is Jacobsen's catalyst? Give its importance.
8. Explain the importance of asymmetric Diels-Alder reaction.
9. Draw the structures of atropine and quercetin.
10. Briefly explain the classification of alkaloids.
11. Distinguish between drug and pro-drug.
12. Give structures of any two antimalarial drugs.
13. What are conducting polymers? Give any two examples.

(2 x 10 = 20)

Section-B

(*Answer any **five** questions. Each question carries **5** marks)*

14. Discuss the applications of supramolecular complexes in perfumery and medicine.
15. Briefly explain the role of ionic liquids and supercritical carbon dioxide as green solvents.
16. How is asymmetric induction carried out by chiral auxiliary strategy?
17. How are carbohydrates classified? Give examples for each class.
18. Explain how PCR makes multiple copies of DNA.
19. Write briefly on the drugs for cancer and diabetes.
20. Discuss briefly on polymers for NLO applications.
21. Assume that you are a beginner in chemical research. How will you start an experimental research?

(5 x 5 = 25)

Section-C

(*Answer any **two** questions. Each question carries **15** marks)*

22. What are the different modes of molecular recognition? Explain with examples.

23. Discuss critically the *twelve* basic principles of green chemistry.
24. Outline the synthesis of camphor.
25. Write notes on i) anticoagulants ii) anti-hypertensive agents iii) chloramphenicol iv) cephalosporin.

(15 x 2 = 30)

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