G 17001120

Reg. No.....

Name.....

M.Sc. DEGREE (C.S.S.) EXAMINATION, MAY 2017

Fourth Semester

Faculty of Science

Branch III : Chemistry–Pure Chemistry

CH 4E 02—ADVANCED ORGANIC CHEMISTRY

(2012 Admissions—Regular)

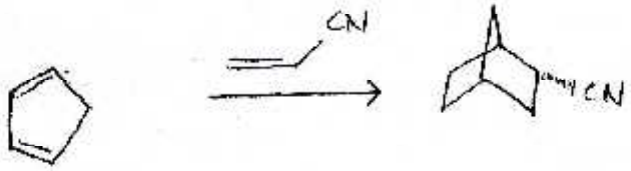
Time : Three Hours

Maximum Weight : 30

Section A

Answer any **ten** *questions.*
Each question carries a weight of 1.

1. What are supramolecular devices ? Cite examples and point out their use.
2. What are Prodrugs ? Write example and suggest their advantages.
3. What are the primary, secondary and tertiary sources of literature ?
4. Calculate the atom economy AE of the following reaction. What is the difference between AE and percentage yield :



5. Establish the importance of hydrogen bonding as a non-covalent force in molecular recognition.
6. What are the major sections of research paper ?
7. What are smart nano-materials ? Illustrate with an example and establish why it is termed as smart.
8. Give structures of PGE 2 and PGF2.
9. Explain regulation of gene expression.
10. Write a short note on fluorous solvents.
11. How dendrimers are classified ?

Turn over

12. What are hyperbranched polymers ?

13. What are green solvents ? Give examples.

(10 × 1 = 10)

Section B

Answer any **five** *questions.*
Each question carries a weight of 2.

14. Explain the different sources involved in molecular recognition.

15. What are alternative (i) energy sources and (ii) reaction media recommended currently on the basis of green chemistry principle ?

16. Explain the modelling techniques in drug designing.

17. Explain the concept of host-guest complex formation.

18. How do you classify nano-materials using TEM ?

19. Explain atom economy and describe atom economic and uneconomic reactions as examples.

20. Write a short note on Asymmetric aldol condensation.

21. What are the different types of research ?

(5 × 2 = 10)

Section C

Answer any **two** *questions.*
Each question carries a weight of 5.

22. List the twelve principles of green chemistry and explain the significance of each very briefly.

23. Explain synthesis of (a) papaverine ; (b) chloramphenicol.

24. Explain :
    (a) Asymmetric induction–chiral auxiliaries and chiral pool.
    (b) Asymmetric epoxidation using Jacobsen's catalyst.

25. Explain :
    (a) Replication of DNA.
    (b) Flow of genetic information.
    (c) Transcription and translation.
    (d) Genetic code.

(2 × 5 = 10)