

G 2028

(Pages : 2)

Reg. No.....

Name.....

**M.Sc. DEGREE (CSS) EXAMINATION, JUNE 2016**

**Fourth Semester**

Faculty of Science

Branch III : Chemistry Pure Chemistry

**CH4 E02—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 is meant by (i) Rational approach to drug discovery and design ; and (ii) a prodrug ?
2. Explain the structure of host molecules that can bind neutral molecules. Write examples.
3. What is the difference between Journal and a Monograph ?
4. Explain the term supramolecular chemistry. Which molecular interactions form its basis ?
5. Illustrate with example the use of nano composites in biomedicine.
6. What are the green alternatives of a pinacol-pinacolone and benzidine rearrangements ?
7. What are green photochemical reactions ?
8. What is the significance of impact factor ? How it is calculated ?
9. Give structures of any two anti-anginal drugs.
10. What are calixarenes ?
11. What are the bases present in DNA ? Give the structures.
12. What is the mechanism of Thiamine catalysed synthesis of Benzoin ?
13. How dendrimers are classified ?

(10 × 1 = 10)

**Section B**

*Answer any five questions.*

*Each question carries a weight of 2.*

14. Explain hyperbranched polymers and its application.
15. Describe the organization of a scientific paper.

**Turn over**

16. Explain the modelling techniques in drug designing.
17. Explain polymerase chain reaction.
18. What are the applications of nanomaterials in medicine?
19. Write a short note on assymetric Diels-Alder reactions.
20. Write a short note on molecular receptors.
21. Explain why Friedel Craft reaction using arrhy  $\text{AlCl}_3$  is not a green reaction. Show how it can be converted to green reaction.

(5 × 2 = 10)

### Section C

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

22. Explain synthesis of :  
(a) Atropine and (b) Testosterone.
23. Briefly describe types of research.
24. Explain :  
(a) Replication of DNA. (b) Flow of genetic information.  
(c) Transcription and translation. (d) Genetic code.
25. Briefly explain characterisation of Nanomaterials using UV-visible spectroscopy.

(2 × 5 = 10)