G 2369 (Pages : 2) Reg. No.....

Name.....

M.Sc. DEGREE (C.S.S.) EXAMINATION, JUNE 2015

Fourth Semester

Faculty of Science

Branch : III – Chemistry – Pure Chemistry

CH 4E 02 – ADVANCED ORGANIC CHEMISTRY

[2012 Admission onwards – Regular/Supplementary]

Time : Three Hours Maximum Weight : 30

Section A

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

1. What is atom economy?
2. Why is microwave energy used in synthesis?
3. Give structures of two commonly used cations for synthesis of ionic liquid.
4. Give a short note on fluorous solvents.
5. What do you mean by cyclodextrins?
6. Give two applications of nano materials in medicine.
7. Define hyper branched polymers.
8. Write the structure of (R) + (–) BINAP Ru (OAC_2) and an example of its use in asymmetric reduction.
9. Explain the term SAR and QSAR in drug design.
10. What are crown ethers?
11. Explain asymmetric Diel's Alder reaction.
12. Write a note on protein biosynthesis.
13. Write the structure of Estrone.

(10 × 1 = 10)

Section B

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

14. What are the alternative (i) energy sources ; and (ii) reaction media recommended currently on the basis of green chemistry principles?
15. Explain the different forces involved in molecular recognition.
16. Explain polymerase chain reaction.
17. What are the requirement for a journal article?

Turn over

18. How are different peptides separated from each other?
19. Explain the synthesis of camphor.
20. Describe briefly the methods of synthesis of dendrimers.
21. Explain the different types of research.

(5 × 2 = 10)

Section C

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

22. Explain the mechanism of :
    (a) Thiamine catalysed benzoin condensation ;
    (b) Clay catalysed synthesis ;
    (c) Green photochemical reactions ; and
    with suitable examples.
23. Explain molecular recognition in biological system.
24. Explain briefly :
    (a) Antibiotics.
    (b) Drugs for cancer.
    (c) Antimaterial drugs.
    (d) Celaphalosporine.
25. Write notes on :
    (a) Replication of DNA.
    (b) Flow of genetic formation.
    (c) Transcription and translation.
    (d) Genetic code.

(2 × 5 = 10)