

(7 pages)

Reg. No. :

Code No. : 9401

Sub. Code : HCHM 41

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2015.

Fourth Semester

Chemistry

ORGANIC CHEMISTRY — IV

(For those who joined in July 2012 onwards)

Time : Three hours

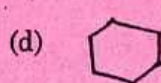
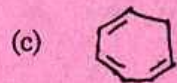
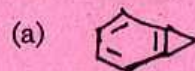
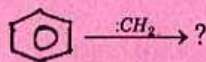
Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

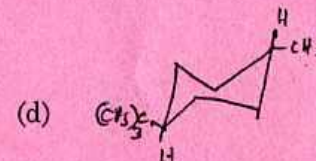
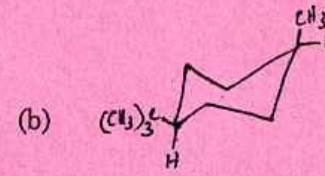
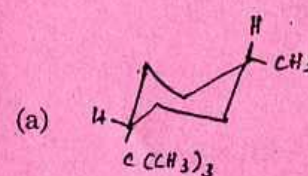
1. The major product of the following reaction



2. Stabilised phosphorous yields

- (a) E-alkene
- (b) S-alkene
- (c) Mixture of E and S alkene
- (d) None of the above

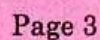
3. The most stable conformation of cis-1-tert-butyl-4-methyl cyclohexane is



4. The compound cis-1, 3-dimethyl cyclohexane is

- (a) optically active
- (b) optically inactive
- (c) having no plane of symmetry
- (d) none of the above

8. CCCCC=O + $H_2O \xrightarrow[\text{CuCl}_2-O_2]{\text{PdCl}_2}$



9. Cholesterol is heated with copper oxide at 290°C gives

- (a) Cholestanone (b) Cholestenone
(c) Cholestanol (d) Cholestanedione

10. Equilenin may be reduced to

- (a) Oestrone (b) Equilin
(c) Oestriol (d) Coprostan

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write short notes on shapiro reaction.

Or

- (b) What is Wittig reaction? Discuss the mechanism.

12. (a) Write brief notes on effect of hydrogen bonding on the disubstituted cyclohexane.

Or

- (b) Write the conformations of perhychophenanthrene.

Page 4

Code No. : 9401

[P.T.O.]



13. (a) Briefly explain use of protecting groups for alcohols.

Or

- (b) Give retrosynthetic analysis of Bisabolene.

14. (a) What are crown ethers? Give examples.

Or

- (b) Discuss about Boron containing reagents in organic synthesis.

15. (a) Explain about two angular methyl groups in cholesterol.

Or

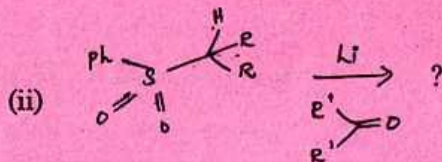
- (b) Write short notes on bile acids.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Predict the name and products of the following reaction



Or

Page 5

Code No. : 9401

- (b) Write short notes on the following :

- (i) Mc Murray Coupling

- (ii) Peterson olifination.

17. (a) (i) Explain the conformations of 1,4 – disubstituted cyclohexane.

- (ii) Draw the most stable conformer of trans-4-tert-butyl cyclohexyltosylate and give the reason.

Or

- (b) Explain Curtin-Hammett principle.

18. (a) (i) Explain about functional group inter conversion.

- (ii) Write short notes on Robinson annulation.

Or

- (b) Give retrosynthetic analysis of the following compounds

- (i) Twistane

- (ii) Camphor.

Page 6

Code No. : 9401



19. (a) Give the applications of following reagents in organic synthesis

(i) DDQ

(ii) Baker's yeast

Or

(b) Explain the applications of boron and phosphorous containing reagents.

20. (a) Give the structural elucidation of androsterone.

Or

(b) Give the structural elucidation of equlenin.

