

(7 pages)

Reg. No. :

Code No. : 8401

Sub. Code : HCHM 41

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2014.

Fourth Semester

Chemistry

ORGANIC CHEMISTRY — IV

(For those who joined in July 2012 onwards)

Time : Three hours

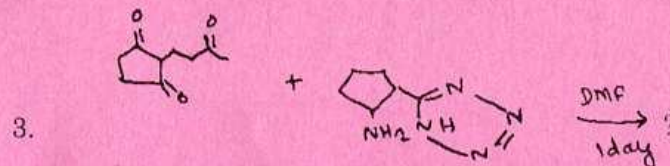
Maximum : 75 marks

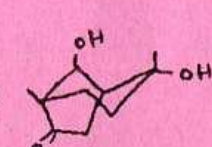
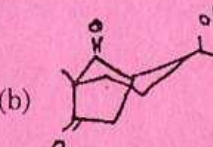
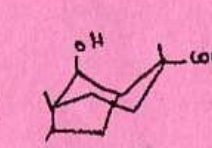
PART A — (10 × 1 = 10 marks)

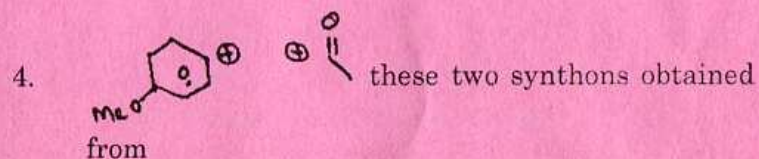
Answer ALL questions.

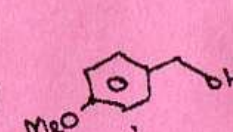
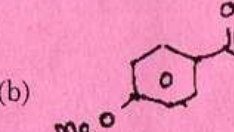
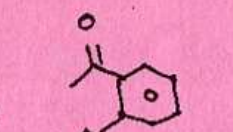
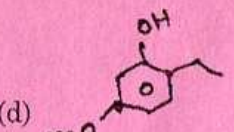
Choose the correct answer

1. The reactive intermediate involved in the acyloic condensation is
 - (a) Carbene
 - (b) Carbocation
 - (c) Carbanion
 - (d) Free radical
2. Wittig reaction involves
 - (a) Carbanion intermediate
 - (b) Carbocation intermediate
 - (c) Carbene intermediate
 - (d) Ylide intermediate



- (a)  (b) 
- (c)  (d) none of these



- (a)  (b) 
- (c)  (d) 

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5. Acid chlorides are converted into aldehydes using _____ catalyst

- (a) Lindlar (b) Rosemund
(c) Organoboranes (d) Ruthenium

6. Cyclopentadiene selectivity reduced to 'R' alcohol with _____ as catalyst

- (a) Crown-ether (b) Baker's yeast
(c) DMSO (d) DDQ

7. Robinson annulation is used in retero synthesis for

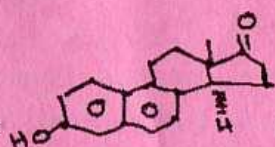
- (a) Ring forming reaction
(b) Ring contraction reaction
(c) Ring expansion reaction
(d) Decomposition reaction

8. Amino groups can be protected by being converted into an

- (a) imide (b) amide
(c) diazonium salt (d) acid

9. 5β cholestane $\xrightarrow{\text{CrO}_3}$?
One B-w

- (a) 5β cholanic acid
(b) bisnor 5β cholanic acid
(c) nor- 5β cholanic acid
(d) etianic acid

10. The structure  is

- (a) Oestrone (b) Equilenin
(c) Progesterone (d) Testosterone

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Explain briefly about Simmon- Smith reaction.

Or

(b) Give the mechanism of Gomberg-pechmann reaction.



12. (a) Discuss the conformation and reactivity of cyclic compounds.

Or

- (b) Compare the stability of cis-decalin and trans-decalin.

13. (a) Mention the applications of activating and blocking groups.

Or

- (b) Give retero synthetic analysis of camphor.

14. (a) How crown ethers acts as on phase transfer catalyst-Explain.

Or

- (b) Explain the synthetic applications of boron containing reagents.

15. (a) Write the structural elucidation of progesterone.

Or

- (b) How to convert cholesterol into testosterone.

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PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) How to generate carbene intermediates? Explain with examples.

Or

- (b) Give the mechanism of the following reaction

- (i) Darzen reaction
(ii) Peterson olifination

17. (a) Briefly explain the various disubstituted cyclohexanes.

Or

- (b) Write short notes on

- (i) Conformations of decalin
(ii) Curtin -Hammett principle

18. (a) Give the retero synthetic analysis of the following compounds.

- (i) Bisabolene
(ii) Twistane
(iii) Cis-Jamine.

Or

- (b) (i) Explain the functional group inter conversion.

- (ii) Write short notes on "Robinson annulation".

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19. (a) Explain about the following reagents in organic synthesis.

- (i) Baker's yeast
- (ii) quaternary ammonium salt.

Or

(b) Give the applications of following reagents in organic synthesis

- (i) Silicon
- (ii) Palladium.

20. (a) Elucidate the structure of cholesterol by the following methods

- (i) Structure of the ring system
- (ii) Nature and position of the side-chain.

Or

(b) Explain the following conversion

- (i) Cholesterol to 5α cholanic acid
- (ii) Oestrone to oestriol.

