

**M. SC. (ORGANIC CHEMISTRY) SEM-IV (CHOICE BASED  
CREDIT & GRADE SYSTEM) : SUMMER - 2018  
SUBJECT : SYNTHETIC ORGANIC CHEMISTRY**

Day : Saturday  
Date : 21/04/2018

**S-2018-0891**

Time : 03.00 PM TO 06.00 PM  
Max. Marks : 60

**N.B.:**

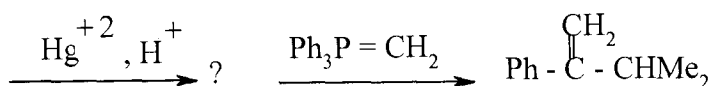
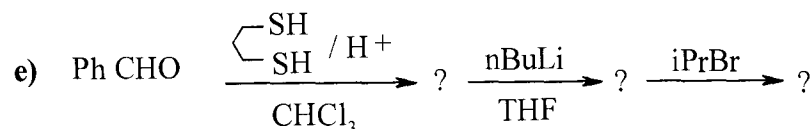
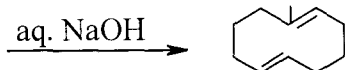
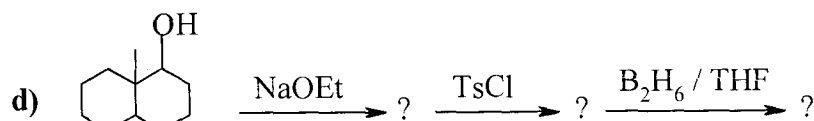
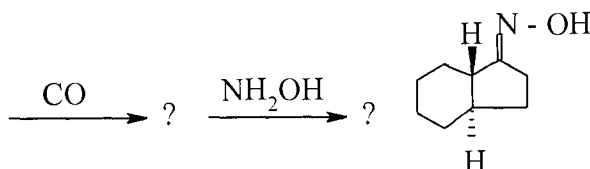
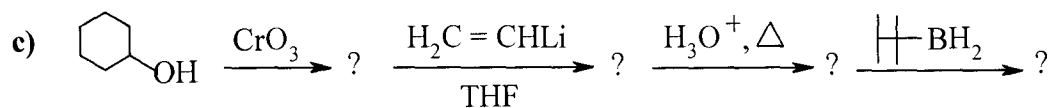
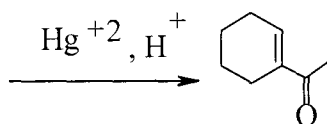
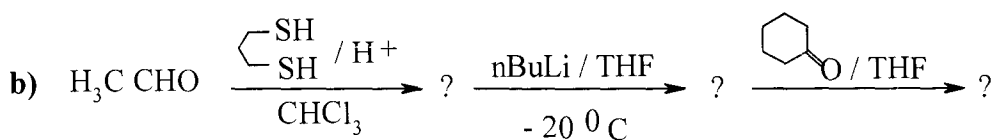
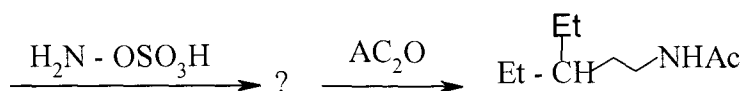
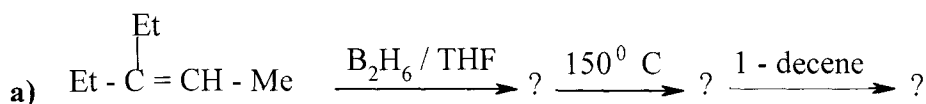
- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.

**SECTION - I**

**Q.1** Explain **ANY THREE** of the following: **[15]**

- a) Role of EE and SEM in hydroxy protection.
- b) Thiamine co-enzyme catalyses important reactions in nature.
- c) Various organosilanes as protecting group.
- d) Suzuki coupling reactions.
- e) Hydroformylation of alcohols.

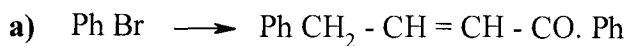
**Q.2** Attempt **ANY THREE** of the following: **[15]**



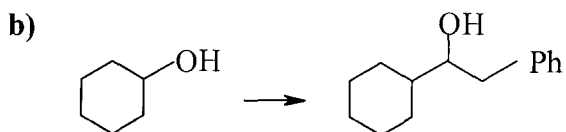
**P.T.O.**

SECTION - II

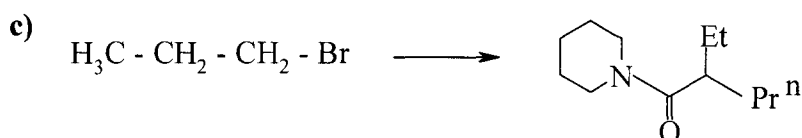
Q.3 Attempt ANY THREE of the following; arrange the reagents in proper order to achieve the target molecule. Write all intermediate products: [15]

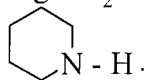


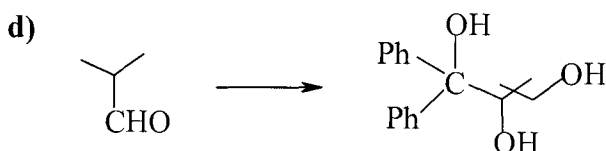
Reagents :  $\Delta$  ; Mg/dry ether;  $\text{H}_3\text{O}^+$  ; acetophenone / NaOEt.



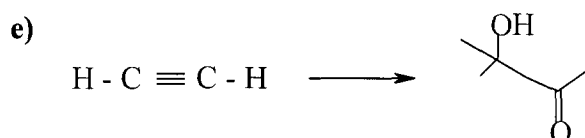
Reagents :  $\text{B}_2\text{H}_6$  / dig;  $\text{PBr}_3$ ; alc. KOH;  $\text{LiAlH}(\text{OMe})_3$ /dryether; CO;  $\text{H}_2\text{O}_2$  buffer;  $\text{PhCH}_2\text{MgBr}$ /THF; $\text{H}_3\text{O}^+$ .



Reagents :  $\text{H}_3\text{C CH}_2 \text{CHO}$  ;  $\text{PBr}_3$  ; Mg /  $\text{Et}_2\text{O}$  ;  $\text{H}_3\text{O}^+$  ; Li / THF ;  $\text{SOCl}_2$  ;  $\text{CO}_2$  ;  $\text{H}_3\text{O}^+$  ;  - H.



Reagents:  $\text{HCHO}$  /  $\text{K}_2\text{CO}_3$ ;  $\text{EtOH}$  /  $\text{H}^+$ ;  $\text{PhMgBr}$  / ether; aq. KCN; aq. NaOH / HOH;  $\text{H}_3\text{O}^+$ .



Reagents :  $\text{Hg}^{+2}$ ,  $\text{H}^+$ ,  $\text{H}_2\text{O}$ ; Na / liq.  $\text{NH}_3$ ; Acetone.

Q.4 Using retrosynthetic analysis suggest convenient route for the synthesis of ANY THREE of the following: [15]

