

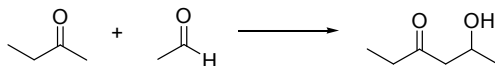
**B.Sc.(Honours)Examination, 2018**  
**Semester-III (CBCS)**  
**Chemistry (Honours)**  
**Core Course: CC-6**  
**( Organic Chemistry)**

**Time: Three Hours**

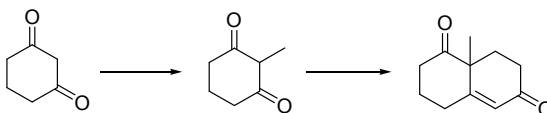
**Full Marks: 40**

Questions are of value as indicated in the margin.  
 Answer *any four* questions.

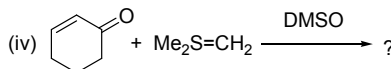
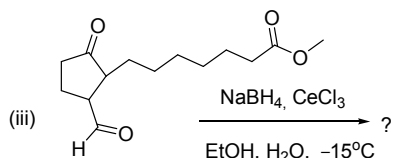
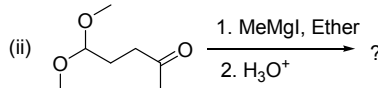
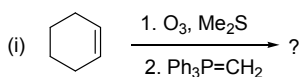
1. a) How would you utilize Directed Aldol Reaction to achieve following conversion: 3



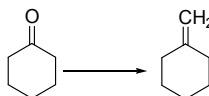
- b) Carry out following synthesis and suggest the structure of the intermediate product(s), if applicable: 3



- c) Predict the structure of the product(s) in each case: 1x4

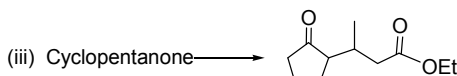
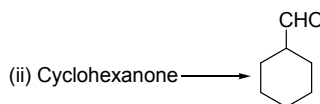
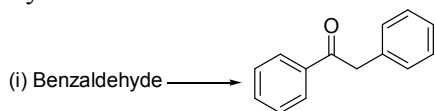


2. a) Suggest at least two synthetic routes for the following conversion: 2



Which one would you prefer actually? Give justification.

- b) Carry out following conversions. Give the structure of the intermediate product(s), if there is any. 2x3



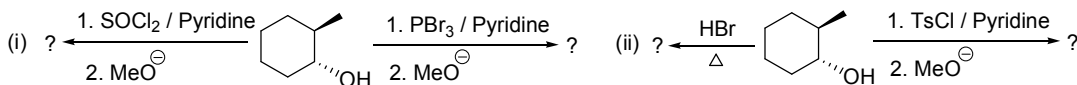
- c) Explain why hydrates of the following compounds can be isolated. Give the structure of the hydrates in each case. 2



(I)

(II)

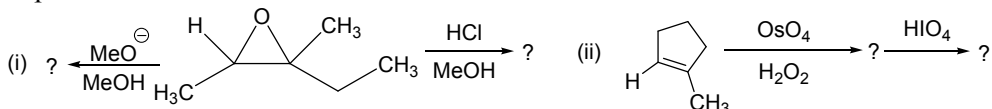
3. a) What stereoisomers would you obtain in each of the following reactions? Justify your answer. 2.5x2



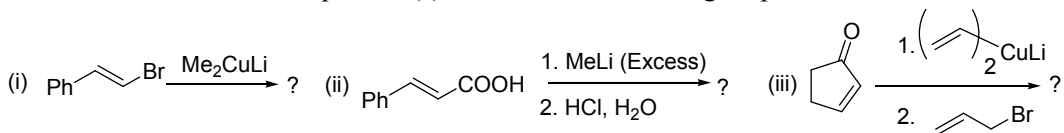
**P.T.O.**

(2)

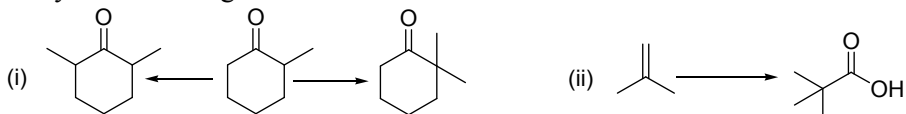
- b) Draw the structure of the major product in each case and justify your answer with the help of plausible mechanism. 2.5x2



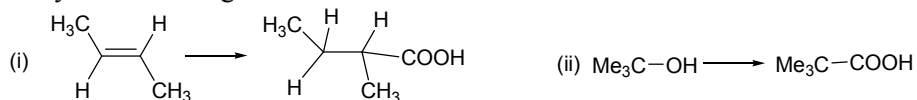
4. a) Predict the structure of the product(s) in each case and also give plausible mechanism. 2x3



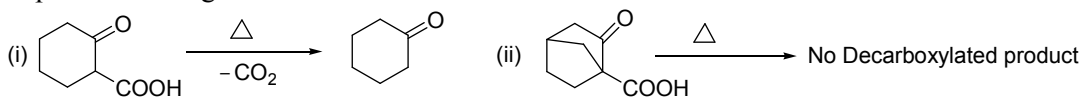
- b) Carry out following conversions: 2x2



5. a) Carry out following transformations: 1x4



- b) Explain following observations: 2



- c) Propose synthetic routes for the following conversions: 2x2



6. a) Nitric acid oxidation of cyclohexene, cyclohexanol and cyclohexanone gives the same product. Explain why giving the structure of that product. 2  
b) Explain why guanidine is a strong base? 2  
c) Compare the stability of diazomethane and ethyldiazoacetate which one is more stable? Explain. 3  
d) Fluorine substitution on aromatic diazonium salt needs different synthetic strategy in comparison to the other halogen substitution reaction on the same moiety. Explain. 3