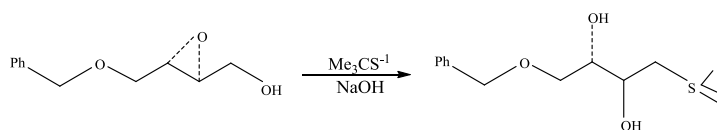
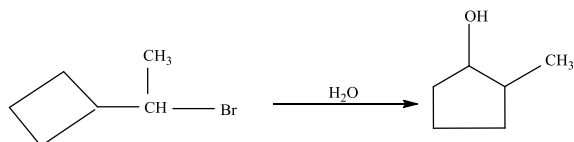


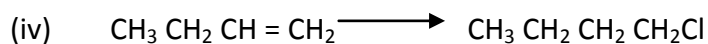
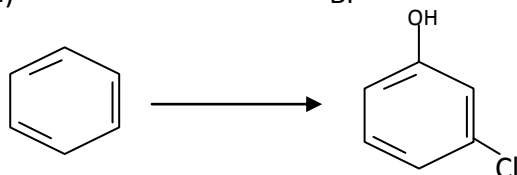
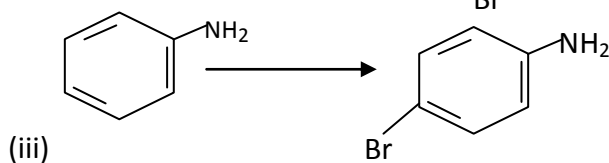
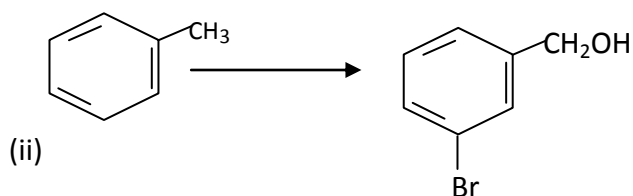
1. (a) Discuss mechanism consistent with following product. [15]



(ii)

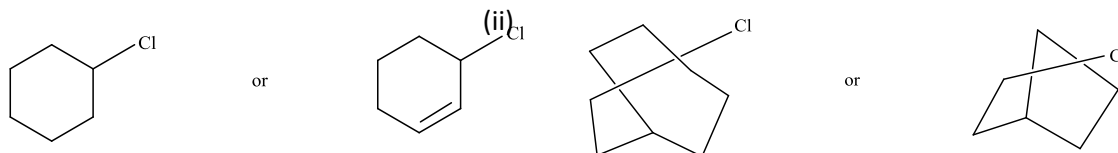


1. (b) How will you achieve following conversion. Give reagent and reaction condition. (20)



1. (c) Which will undergoes faster $\text{S}_{\text{N}}1$ reaction and why. [15]

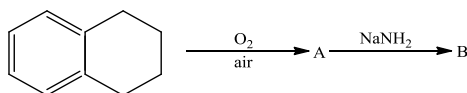
(i)



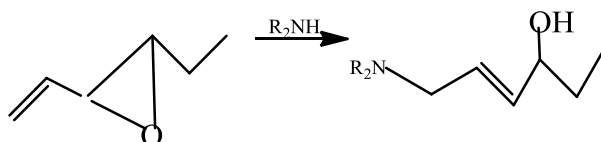
2. (a) Explain the following with logical explanation. [5×4]

- When 1-nitro anthracene reacts with toluene in presence of HF & SbF_5 it give p-nitro toluene.
- Pyrrrole does not undergo electrophilic substitution reaction in highly acidic medium.
- E_2 – Elimination of Meso -2, 3 – dibromobutane give trans 2-butene exclusively.
- Napthalene undergo sulphonation at 1-position at 80°C while at 2-position at 160°C , in the presence of oleum.

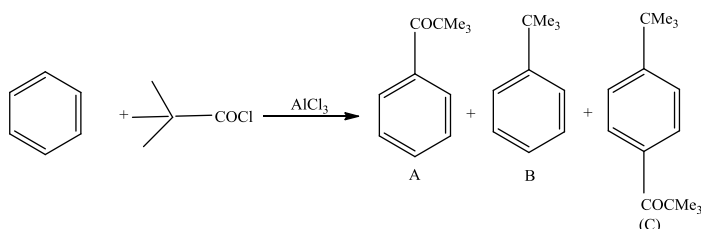
2. (b).(i) Write product with mechanism [10×2]



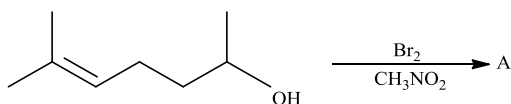
(i) Discuss mechanism of given transformation



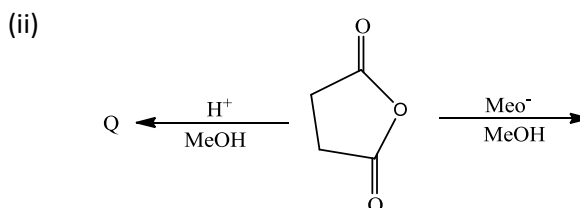
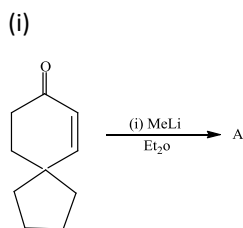
2. (c) . Explain how these products are formed and suggest the order in which two substituent's are added to form disubstituted compound. [10]



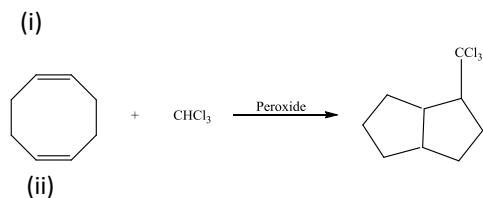
3. (a) Give product and explain mechanism [10]



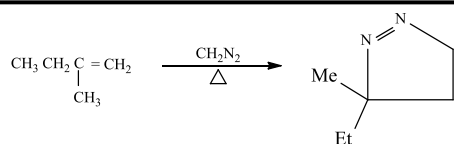
3. (b) Draw the product and propose mechanism [10]



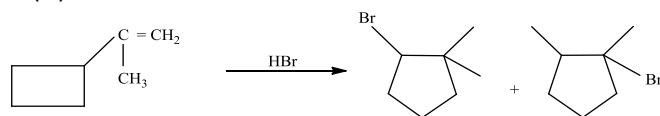
3.(c) Write mechanism for following transformation. [15]



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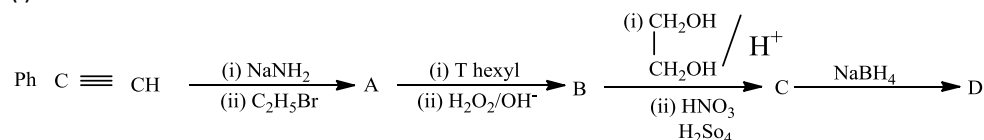


(iii)

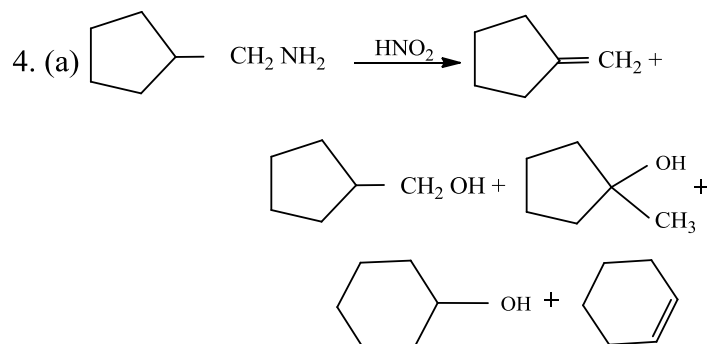


3. (d). Complete the following reaction giving product. [15]

(i)



Discuss mechanism for formation of products. [15]



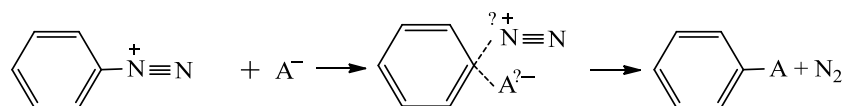
4. (b) Hexylbenzenesulphonate reacts with sodium meth oxide to give hexylmethylether in over 90% yield with only a trace of 1-hexene being formed. With potassium-t-butyl oxide however the yield of t-butylhexylether is 69% and 20% of 1-hexene is formed. (10)

4. (c) 3-bromocyclohexene react with NaOH more rapidly than 4-bromocyclohexene, which in turn reacts more rapidly than bromocyclohexane. Explain.

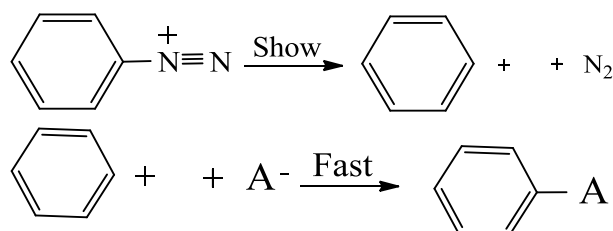
[10]

4. (d) Following two mechanism are among those which have been postulated for the decomposition of aryl diazonium salts in aqueous solution containing Nucleophilic anion A^- :-

Mechanism A;



Mechanism B



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Indicate how the following method might be applied to distinguish between the two mechanisms:

- (i) Kinetic studies
- (ii) Study of rate & product composition as function of $[A^-]$
- (iii) Solvent isotope studies
- (iv) Study of isotope effect from resulting from substitution of D from H ortho position
- (v) Substituent effect studies [15]