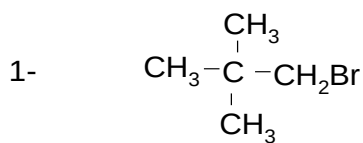
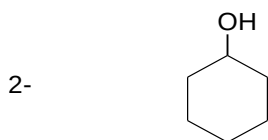


QUESTION 1: (28 points)

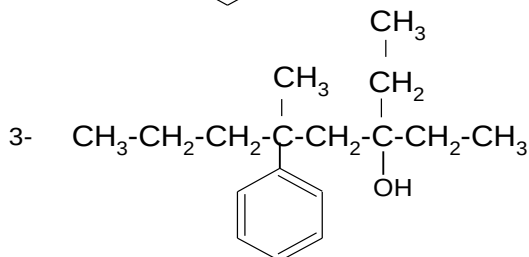
A - Name any (7) of the following organic compounds using IUPAC or common names:



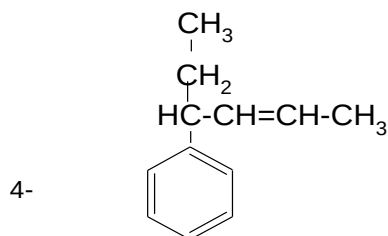
Name, -----



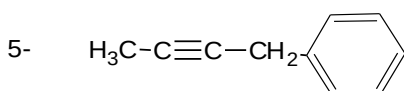
Name, -----



Name, -----



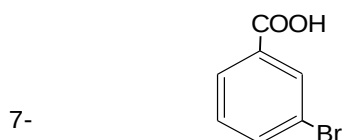
Name, -----



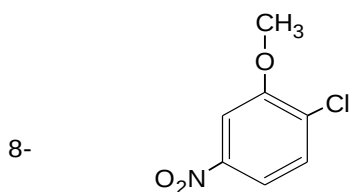
Name, -----



Name, -----



Name, -----



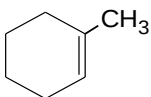
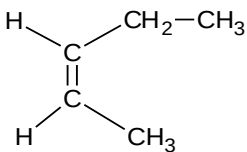
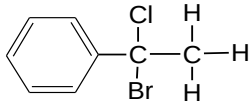
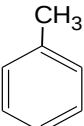
Name, -----

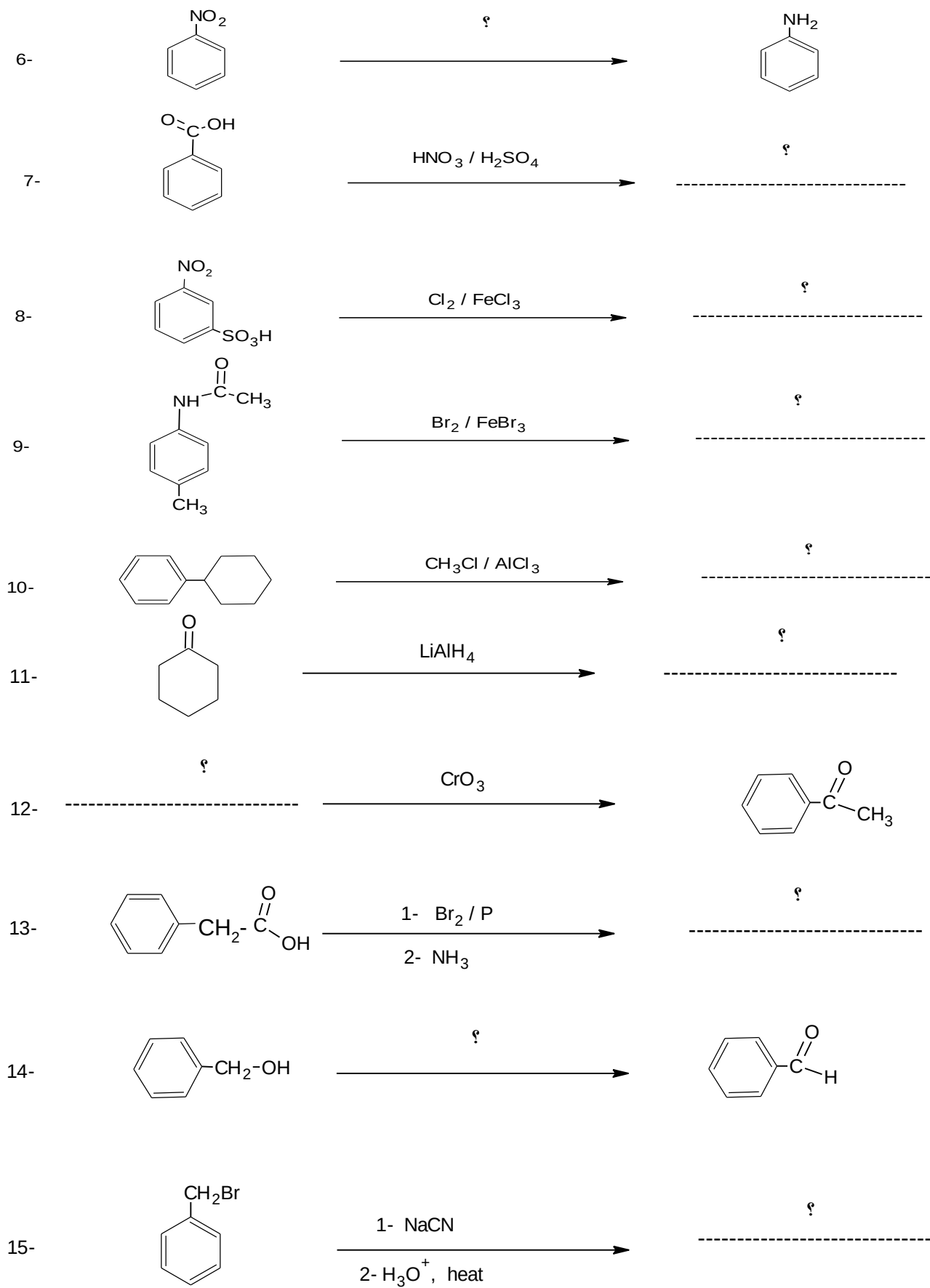
**B- Draw the structures of any (7) the following organic compounds:
draw the structure above the given name**

- | | |
|--------------------------------|--|
| ? | ? |
| 1- <i>tert</i> -Butyl alcohol. | 2- <i>cis</i> -1,2-diPhenylethene. |
| ? | ? |
| 3- Benzylmethacetylene | 4- 1,2,3-Propanetriol. |
| ? | ? |
| 5- 2-Hydroxy-4-nitroaniline. | 6- <i>p</i> -Aminobenzenesulfonic acid |
| ? | ? |
| 7- <i>o</i> -Bromoanisole | 8- 4-Bromo-2-methyl-1-penten-3-ol. |

QUESTION 2: (36 points)

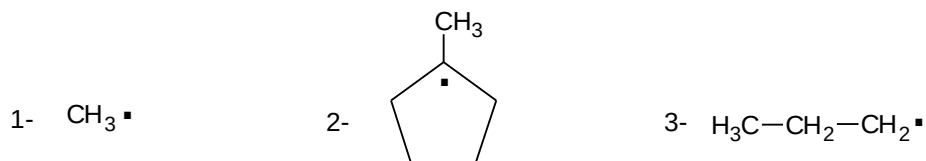
Complete any (12) the following reactions by writing the missed reactants or products:

- | | | | | | |
|----|---|--|---|---|-------|
| 1- |  | HI | → | ? | _____ |
| 2- | $\text{H}_3\text{C}-\text{C}\equiv\text{C}-\text{CH}_2-\text{CH}_3$ | ? | → |  | |
| 3- |  | 1- O_3
2- $\text{Zn} / \text{H}_2\text{O}$ | → | _____ | |
| 4- | ? | 1- HCl
2- HBr | → |  | |
| 5- |  | KMnO_4 , OH^-
heat | → | ? | _____ |

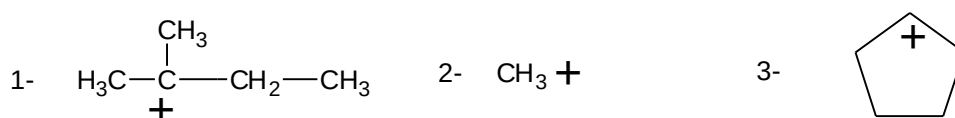


Question 3: (12 points)

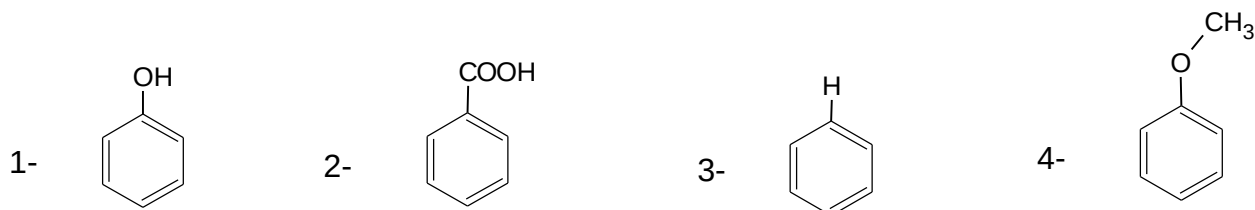
a- Arrange the following alkyl free radicals according to their relative stability:



b- Arrange the following carbocations according to their relative stability:



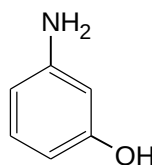
d- Arrange the following aromatics according to reactivity towards electrophilic aromatic substitution:



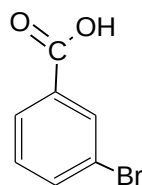
Question 4: (18 points)

Choose any two

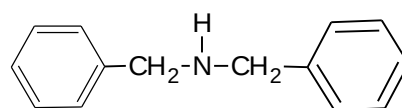
1- Starting with benzene how can you prepare



2- Starting with toluene how can you prepare

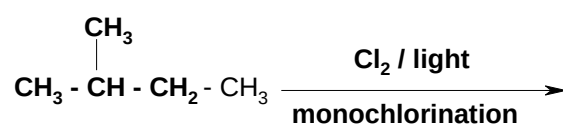


3- Starting with toluene how can you prepare



Question 5: (6 points)

Predict all the possible isomers given by the following reactions:



Good luck
Dr. Nabil Shurrah