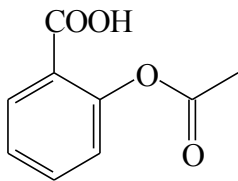
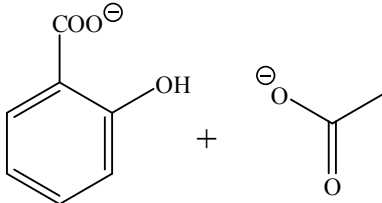
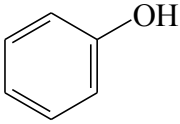
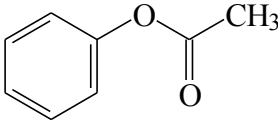
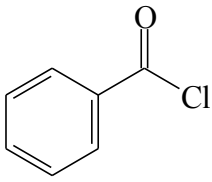
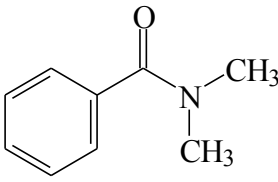


Marks
1

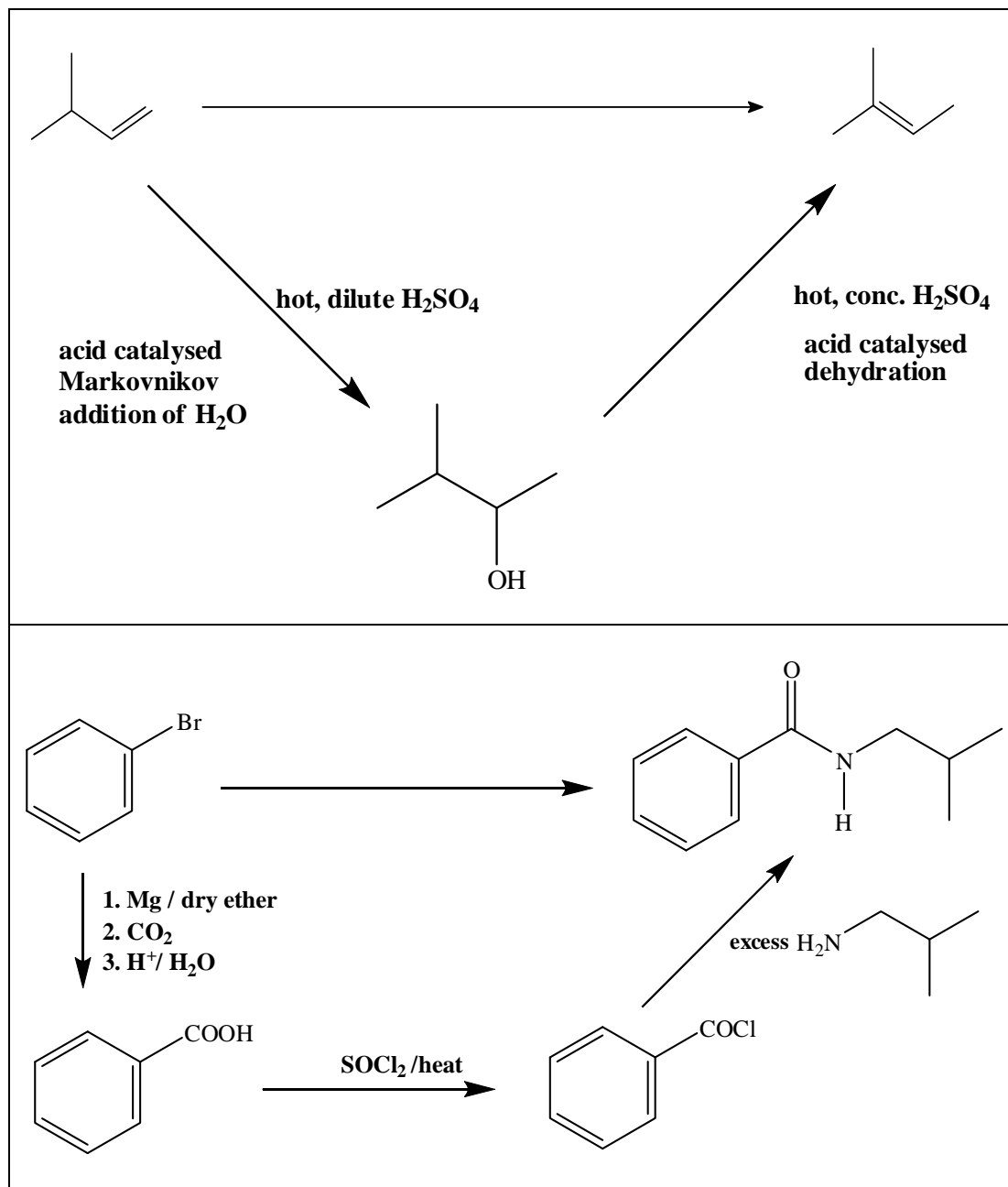
- Complete the following table. Make sure you give the name of the product or starting material where requested.

STARTING MATERIAL	REAGENTS/CONDITIONS	CONSTITUTIONAL FORMULA(S) OF MAJOR ORGANIC PRODUCT(S)
	$\text{OH}^{\ominus} / \text{H}_2\text{O} / \text{heat}$	

- Complete the following table.

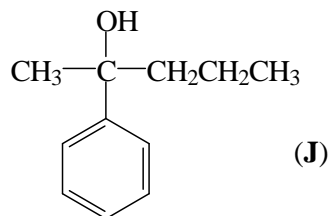
STARTING MATERIAL	REAGENTS/CONDITIONS	CONSTITUTIONAL FORMULA(S) OF MAJOR ORGANIC PRODUCT(S)
	CH_3COCl	
	$(\text{CH}_3)_2\text{NH}$	

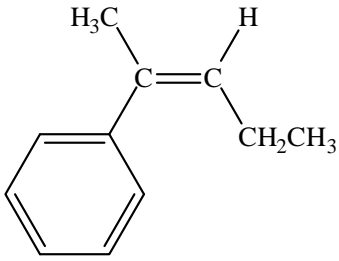
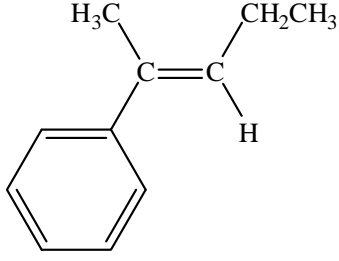
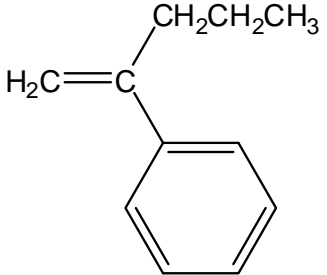
- Show clearly the reagents you would use to carry out the following chemical conversions. Draw constitutional formulas for any intermediate compounds. NOTE: more than one step is necessary in each case.



- 2-Phenyl-2-pentanol (**J**) is treated with concentrated sulfuric acid to give a mixture of three alkenes (**K**), (**L**) and (**M**). Alkenes (**K**) and (**L**) are diastereomers while (**K**) and (**M**) [and (**L**) and (**M**)] are constitutional isomers. Give the structures and systematic names for (**K**), (**L**) and (**M**).

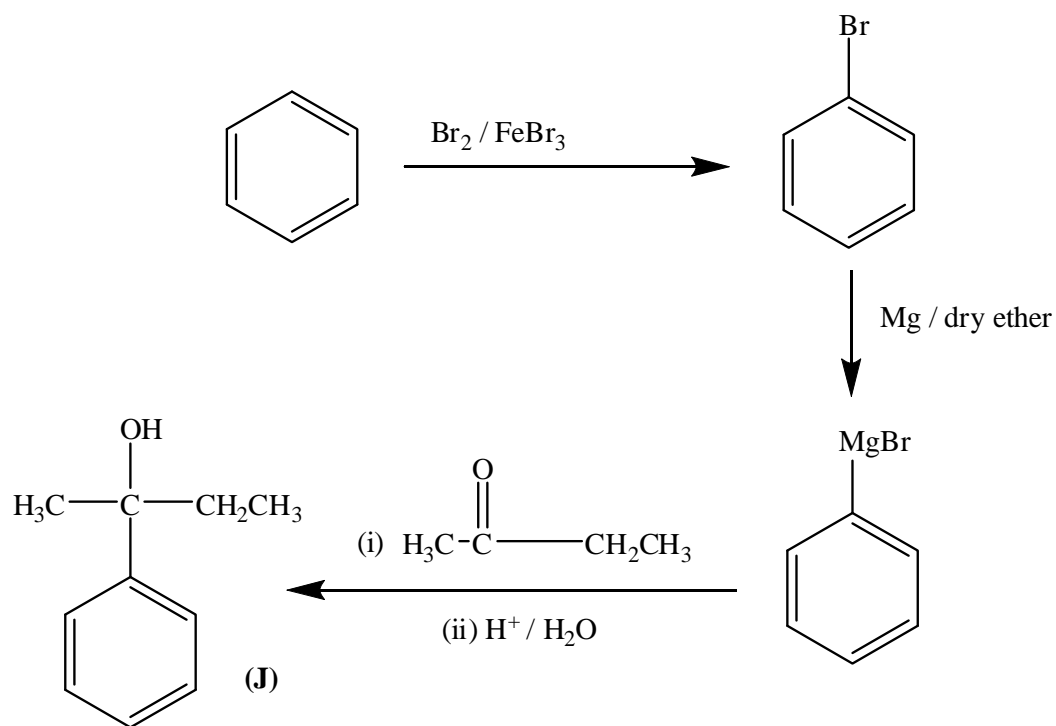
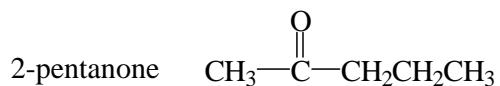
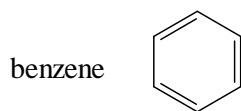
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9



<p>(K)</p> 	<p>(L)</p> 	<p>(M)</p> 
<p>Name (Z)-2-phenyl-2-pentene</p>	<p>Name (E)-2-phenyl-2-pentene</p>	<p>Name 2-phenyl-1-pentene</p>

ANSWER CONTINUES ON THE NEXT PAGE

Outline a reaction sequence that converts benzene into 2-phenyl-2-pentanol (**J**) and that also uses 2-pentanone as a reactant somewhere in the sequence. Any solvents and inorganic reagents may be used. More than one step is required. Show clearly the reagents you would use and draw constitutional formulas for any intermediate compounds.



- Show clearly the reagents you would use to carry out the following chemical conversions. Draw constitutional formulas for any intermediate compounds. Note: More than one step is required in both cases.

Marks
3

