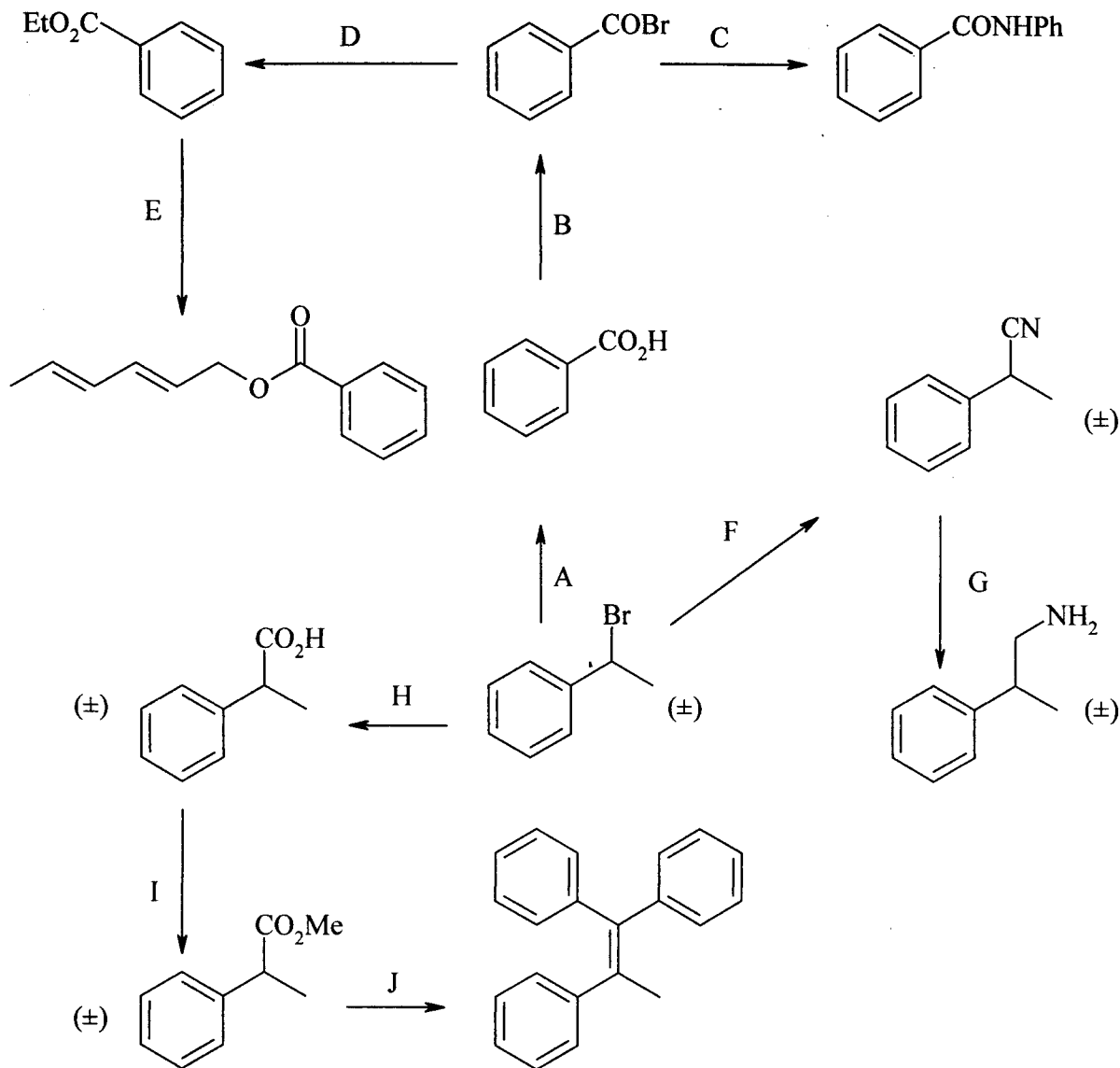


3. Supply the **best** reagents and conditions (solvents, etc) A to I for the 'road map' below.
Some transformations require more than one step. (10 marks)



A $\text{KMnO}_4 / \text{H}^+ / \text{H}_2\text{O} / \Delta$.

F NaCN / THF

B SOBr_2

G 1) $\text{LiAlH}_4 / \text{THF} / 0^\circ\text{C}$
2) H_2O

C $\text{NH}_2\text{Ph} / \text{pyridine}$

H 1) $\text{Mg} / \text{ether} / 0^\circ\text{C}$
2) $\text{CO}_2 (\text{s})$ 3) H_3O^+

D $\text{EtOH} / \text{pyridine}$

I $\text{MeOH} / \text{H}^+ (\text{cat})$
excess.

E $\text{CH}_3(\text{CH}_2)_4\text{OH} / \Delta / \text{H}^+ \text{cat.}$

J 1) excess $\text{PhMgBr} / \text{ether}$
2) H_3O^+