Show clearly the reagents you would use to carry out the following chemical conversion.
 Draw constitutional formulas for any intermediate compounds.
 NOTE: More than one step is necessary.

Marks 4

## **Route 1:**

dilute 
$$H_2SO_4$$

OH

$$Cr_2O_7/H^+$$

Oi)  $Na^{\bigoplus \Theta}C = CH$ 

Oii)  $H_2SO_4$ 

OH

OH

## **Route 2:**

conc. KOH ethanol solvent

Br

Br

$$Mg / dry ether$$

(i)  $CH_3CHO$ 

(ii)  $H^{\bigoplus}/H_2O$