• Draw the repeating unit of the polymer formed in the following reactions.

Marks 2

4

CH<sub>3</sub>O OCH<sub>3</sub>

$$+ C C N NH2$$

$$+ NH2 N NH2$$

• 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.

OH

conc. H<sub>2</sub>SO<sub>4</sub>
(dehydration)

CH<sub>3</sub>COCI

HBr (Markovnikov addition across double bond with H adding to least substituted end of double bond).

Mg/dry ether

MgBr (i) H<sub>2</sub>CO

(ii) H<sub>3</sub>O<sup>+</sup>