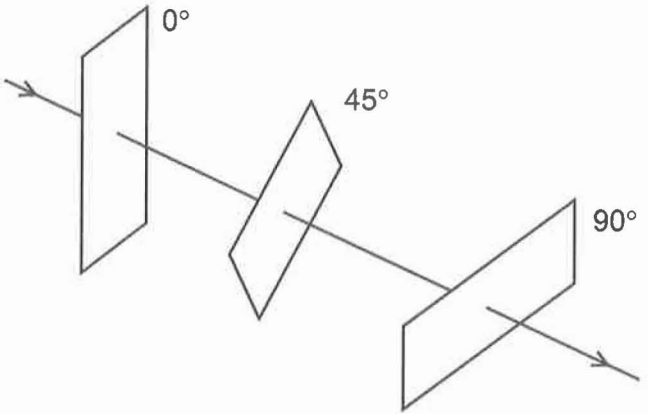
21 A narrow, parallel beam of unpolarised light of intensity I and amplitude A is directed towards three ideal polarising filters.

The beam meets the first filter with its plane of polarisation vertical. The plane of polarisation of the second filter is at an angle of 45° to the first filter. The beam emerges from the second filter with amplitude $\frac{A}{\sqrt{2}}$. The third filter has its plane of polarisation at 90° to the first filter, as shown.



What will be the intensity of the beam after passing through the third filter?

A zero **B** $\frac{I}{8}$ **C** $\frac{I}{4}$ **D** $\frac{I}{2}$