22 An observer hears a sound wave emitted from a moving source.

The observed frequency is less than the frequency of sound emitted from the source.

What could be the reason for this?

A The source is moving away from the observer.

B The source is moving towards the observer.

C The speed of the sound wave in air decreases due to the movement of the source.

D The speed of the sound wave in air increases due to the movement of the source.

23 What is the approximate range of frequencies of electromagnetic radiation visible to the human eye?

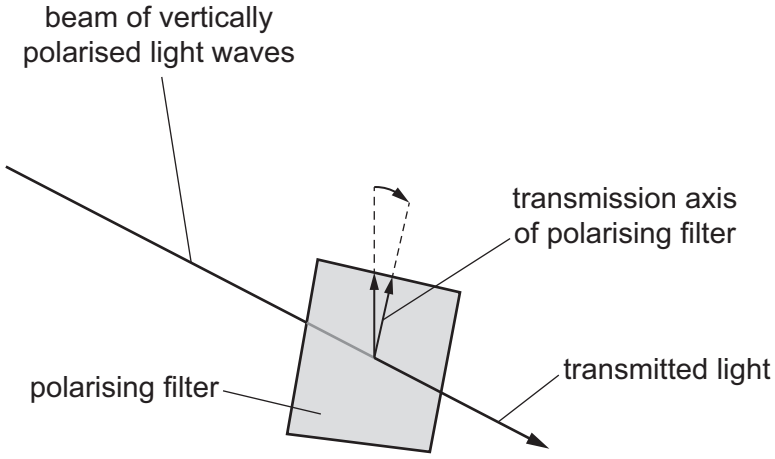
A (430–750) kHz

B (430–750) MHz

C (430–750) GHz

D (430–750) THz

24 A beam of vertically polarised light is incident normally on a polarising filter. The filter can be rotated so that it is always in a plane perpendicular to the beam. The transmission axis of the filter is initially vertical.



The filter is first rotated clockwise by an angle of 30° so that the transmitted light waves have intensity I_{30}.The filter is then rotated clockwise by a further angle of 30°.

What is the new intensity of the transmitted light waves?

A $0.25\,I_{30}$ **B** $0.33\,I_{30}$ **C** $0.75\,I_{30}$ **D** $0.87\,I_{30}$