5 An X-ray photon of wavelength 965.0 x10^{-12} m collides elastically with a stationary electron.

incident photon
wavelength 965.0 × 10^{-12} m

deflected photon
wavelength 966.8 × 10^{-12} m

75°

α

deflected electron
momentum P
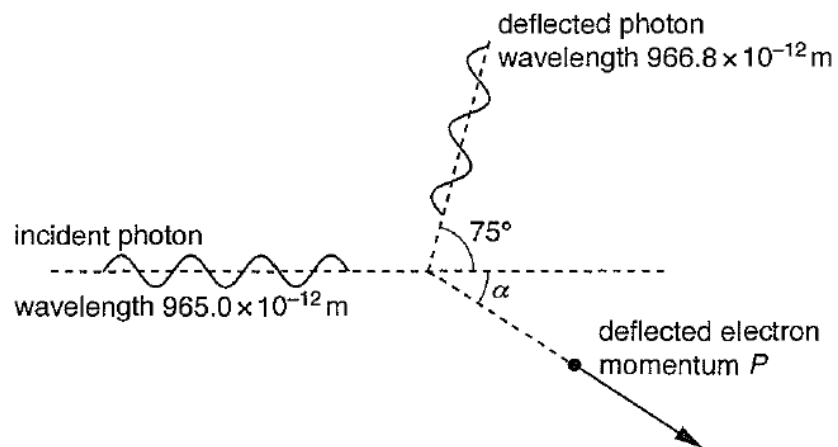
The photon is deflected through an angle of 75° and has a wavelength of 966.8 x10^{-12} m.

Given that the momentum carried by the deflected electron is 8.362 x 10^{-25} N s.

What is the deflection angle α of the electron?

A 12°   **B** 38°   **C** 52°   **D** 78°