

**27** Which of the following statements explains the existence of energy levels within atoms?

- A** Atoms in a solid can diffract electrons in the same way as crystals diffract X-rays.
- B** Photoelectrons are only emitted from a metal surface for incident photons of wavelengths shorter than a critical wavelength.
- C** When viewed through a diffraction grating, line spectra can be observed from a sodium vapour lamp.
- D** There is a minimum cut-off wavelength in the production of X-ray.

