

14. Electromagnetic radiation of frequency  $9.0 \times 10^{14}$  Hz is incident on a clean, negatively charged metal surface.

The work function of the metal is  $6.1 \times 10^{-19}$  J.

There is no photoelectric emission from this metal caused by this radiation.

This is explained by the fact that

- A photoemission can only occur from a positively charged metal surface
- B the wavelength of the incident radiation is too short
- C the frequency of the incident radiation is less than the threshold frequency of this metal
- D the work function of the metal is less than the energy of the incident photons
- E the number of photons per second incident on the surface of the metal is too low.