SECTION B

Answer ALL questions in the spaces provided.

11 A standard candle in the galaxy M81 has a luminosity 14 800 times the luminosity of the Sun. The intensity of radiation received from the standard candle, measured at the top of the Earth's atmosphere, is $3.64 \times 10^{-17}\,W\,m^{-2}$.

Calculate the distance of the M81 galaxy from Earth.

$L_{Sun} = 3.83 \times 10^{26}\,W$

Distance of M81 from Earth = ...

(Total for Question 11 = 3 marks)

DO NOT WRITE IN