Test 2

26.04.2017

1. Upon heating, the maximum of intensity of blackbody radiation has been shifted from λ_1 to λ_2 . Total power density emitted from the blackbody surface:

A. has increased $\left(\frac{\lambda_1}{\lambda_2}\right)^2$ times

B. has decreased $\left(\frac{\lambda_1}{\lambda_2}\right)^2$ times

C. has increased $\frac{\lambda_1}{\lambda_2}$ times

D. has increased $\left(\frac{\lambda_1}{\lambda_2}\right)^4$ times

E. remains the same

2. Wavelength at which the maximum of black body radiance occurs at 37^{o}C equals to:

A. 9.35 μm

B. 78.3 μm

C. 12.3 μm

D. 9.35 nm

E. 78.3 mm

Wien's constant C=2898 μm·K

3. Select the correct statement:

A. ultraviolet light has a longer wavelength than infrared

B. blue light has a higher frequency than x rays

C. radio waves have higher frequency than gamma rays

D. gamma rays have higher frequency than infrared waves

E. electrons are a type of electromagnetic wave

4. The units of the Planck constant h are those of:

A. energy

B. power

C. momentum

D. angular momentum

E. frequency

5. The intensity of a uniform light beam with a wavelength of 500 nm is 2000 W/m^2. The photon flux (in number/m^2·s) is about:

A. 5×10^{17}

B. 5×10^{19}

C. 5×10^{21}

D. 5×10^{23}

E. 5×10^{25}