PH 105 – Quantum Mechanics

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3)  
hc/λ - φ = eV

hc(1/λ1 – 1/ λ2) = e(V1- V2)

h = e(V1- V2)/ [c(1/λ1 – 1/ λ2)]

Substitute

λ1 = 1850Å λ2 = 5460Å V1= 4.62 V V2=.18 V

On solving,

**h = 6.64 x 10-34**

Substitute this value in hc/λ1 - φ = eV1

Φ = 3.366 x 10-19 J

**Φ = 3.366 x 10-19 / 1.602 \*10-19 = 2.1 eV**

hνt = 3.366 x 10-19

νt = 3.366 x 10-19/ 6.64 x 10-34

**νt = 0.5 x 10-15 Hz**