**Mini-quiz #7 Chemistry 1114 Wednesday 11 September 2013 8 pts**

Your name:\_\_\_\_\_\_\_\_\_\_answers\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ A

Given that: h=6.63\*10-34 J\*s ; c=3\*108 m/s and E/photon=hf

1. What is the frequency of photon with λ=1.5\*102 m

c/λ = f= 3\*108/1.5\*102 =

 **\_\_\_2\*106**\_ Hz

1. What is the energy of the photon described above ?

E=hf= 6.63\*10-34 \*2\*106 =

1.326\*10-27 J/photon

1. The energy of a photon is 6.63\*10-20 J/photon.
2. What is its frequency ? \_\_\_\_\_\_\_\_\_\_\_1014\_\_\_\_\_\_\_\_ Hz

E/h = f =6.63\*10-20/6.63\*10-34 =1014

1. What is its wavelength ? \_\_\_\_\_\_\_3\*10‑6\_\_\_\_\_\_\_\_\_\_ m

**3\*108 /f= λ =3\*108/1014 =3\*10-6 m**

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Given that: h=6.63\*10-34 J\*s ; c=3\*108 m/s and E/photon=hf

1. What is the frequency of photon with λ=30 m

f=c/30=3\*108/30=

 \_\_107\_\_\_\_\_\_\_ Hz

1. What is the energy of the photon described above ?

Hf= 6.63\*10-34\*107 =

\_6.63\*10-27 J /photon

1. The energy of a photon is 6.63\*10-19 J/photon.
2. What is its frequency ? \_\_\_\_\_\_\_1015\_\_\_\_\_\_\_\_\_\_\_\_ Hz

E/h=f= 6.63\*10-19/6.63\*10\_34= 1015

1. What is its wavelength ? \_\_\_\_\_3\*10-7\_\_\_\_\_\_\_\_\_\_\_\_ m

c/f= λ=3\*108/1015 =3\*10-7 m