

1. Electromag. Rad., UV, microwave, vis. Lt, Xrays
2. Characterized w/ λ , ν
3. cl Q:

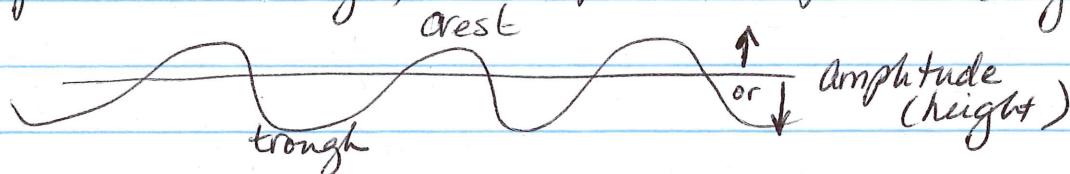
is EMR a wave
a particle
both
Neither ?

4. ans = both

5. Lt as a wave

6. λ = wavelength = dist between similar pts (crest/crest)

7. wave "parts" = trough, crest (peak), amplitude (height)



8. note: units will be distance

9. ν = frequency: how often a pt on a wave crosses a given pt
in a given period of time

10. ex: 2 waves pass a pt in one sec

$$\nu = \frac{2}{\text{sec}} \text{ or } 2 \frac{1}{\text{sec}} \text{ or } 2 \text{ s}^{-1} \quad \text{s preferred over sec}$$

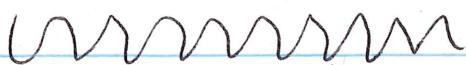
11. units, then = Cycles/time or Waves/time
number (no units) in numerator

12. Hertz (Hz) = Cycles/s, so # 10 = 2 Hz

13. Higher ν = higher E ($\therefore \downarrow \nu = \downarrow E$)

14. longer λ = lower ν = lower E

15. higher ν = shorter λ = higher E



16. c, sp of Lt = $3.0 \times 10^8 \text{ m/s}$ ($3.0 \times 10^8 \text{ m.s}^{-1}$) = $\lambda \nu$