Sunday, 22 November 2020

14:43

Light EM Sprectrum (Colour Sprectrum) - Not in scale Visable Light IR r rays X-ray UV Radio Micro Ultraviolet 4000m SSSring Red Gran Scomme SSSring Infrared -wave -wave (gamma) 10-6 (0⁻¹⁰ (0⁻³ (0-1 10-12 10-8 λ/m Young's Double Slif Expriment D = distance [m] $\Delta y = \frac{D\lambda}{a}$ Screen 2 = Light ray [nm] a = Slit seperation D6 Sht (5) 1st 2nd Order of fringes ∆y _ Fringe Seperation (D>>a) (S) - related to order must be applied $-(\Delta y = \frac{D \Delta \lambda}{a})$ ۵y Grating (Hultiple Slits) $d \sin \theta_m = m\lambda$ $\theta = \sin \theta_m = \theta$ of order $m = m^{+}$ order 2 = lightray 2 Source more about **d** -given at $\frac{n \times 100 \text{ slit}}{\text{mm}} \Rightarrow \frac{1}{n} \times 10^7 \text{ m}$ -given xµm ⇒ x·10⁶m Total ray can be produce set sin 0 = 1 round down t

Magnetic Field V Electric Field EM wave

Sound

Tuning Fork : Constant f Longitutional Wave Speed = V_{solid} > V_{liquid} > V_{gas} Water Air 1497ms⁻¹ 343ms⁻¹ V 🗢 Density / Temp Measurement / Sound Intensity C.R.O. (Cathode Ray Octiloscope) Sound Wave -> a.C. signal Unit decibel [dB] -> Expostencial +1018 = ×10 Intensity Audiable Sound: 20 ~ 20 kHz OdB Nothing Ultra: >20kHz 60 dB Conversation 120 dB Pain & Flurt Usage 140 dB South Perimeter Road W/ 07R dept. In use Ultrasound detection d = Vt Sent / reflect Intensity & j2 (from s=vt but half dist) examples usage - Body & foetus scan - flaw detection (hoph desity metal) - Glass / Jewelleny cleaning (Virbratug particuls) ----- frequency Pitch Proportinal +0 Ampitude Loudness Quality ---- Wave form J Not Physics Physics Terms (Subjective)

Light vs Sound Mechanical EM wave Longituinal (Nature : Transverse V & density : V & density V or density 3× 102 ms 3 × (08 ms-1 **V** in air J vaccum ≥ Δλ → V same Unable (w/o particle) other Inter water V & 2 Red Green Δ2 → Vsame about Im λ = too small Notrcable Unnotice Diffraction About 0.02 ~ 20m 400 ~ 750 nm Human (0⁹m

