

7. Nd-YAG is a pulsed laser.

Compare the two laser

Table 1

He-Ne	Nd-YAG
1. Active medium is gaseous	solid
2. Electric pumping	Optical pumping
3. Continuous laser	Pulsed laser
4. 6328 A.U. (<u>Visible</u>)	10600 A.U. (Not visible it is IR region)
5. application	

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Heavy doped diode, FW bias, $I > I_0$

9. He-Ne laser system has two metastable states E3 and E2 in Ne. because of these metastable states atoms get locked in them and there are no atoms available in the ground state to be sent to the excited state. Hence, tube diameter is kept small to increase the collision of atoms and tube wall so that atoms can lose their energy travel from E3 to E2 and then from E2 to E1 i.e. the ground state and be ready for excitation.

~~_____~~ ~~_____~~ ~~_____~~ He — e1

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10. The medium in which laser production happens by amplification of light is called active medium. In other words the medium which works for production of laser actively is called active medium.

11. factors on which stimulated emission depends is

1. Photon/ Radiation density $Q(\nu)$
2. Number of atoms in the excited state (N_2)

1. Ray should travel from denser to rarer medium

2. $I > I_c$



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Eg optical transmitter : LED, laser.

14. purpose of sheath : protection

15. Physical significance of

~~EXAMPLE~~ $L \rightarrow E$

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→ Eg optical transmitter : LED, laser

$E \rightarrow L$

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Light gathering capacity of fiber optic cable

Single Slit minima
maxima

$$a \sin \theta = n\lambda$$

$$a \sin \theta = (2n+1) \frac{\lambda}{2}$$

Double Slit min
maxi

$$(a+b) \sin \theta = (2n+1) \frac{\lambda}{2}$$

$$(a+b) \sin \theta = n\lambda$$

Formula

grating formula: $(a+b) \sin \theta = n\lambda$

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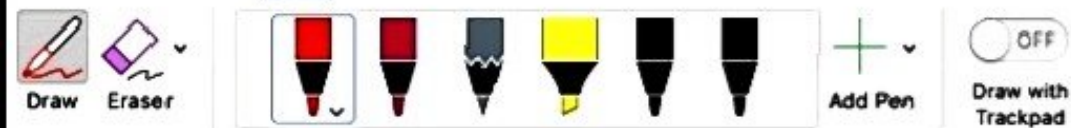
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Diff 5

opacity is double that of transparency
 $b = 2 \times a$

$$m = a + \frac{2a}{a} \times n = 3n$$

$$n = 1, 2, 3,$$

6) Draw intensity graph single Slit

$\alpha = n\pi$
minima
 $\alpha = 0$
Principle Max

