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. (Visible)	10600 A.U. (Not visible it is IR region)
5. application	

8. In order to achieve population inversion in semiconductor diode laser , a heavily doped diode is forward bias and a current larger than the threshold current is to be passed through the

8. In order to achieve population inversion in semiconductor diode laser , a heavily doped diode is forward bias and a current larger than the threshold current is to be passed through the diode.
Heavy doped diode, FW bias, I > Io

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.

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10. The medium in which laser production happens by amplification of light is called active medium. In order 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(v)
    2. Number of atoms in the excited state (N2)

1. Ray should travel from denser to rarer medium
2. I > ic

13. eg optical receiver : solar cell, photodiode
Eg optical transmitter : LED, laser

14. purpose of sheath : protection

15. Physical significance of

L → E

13. eg optical receiver : solar cell, photodiode

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E → L

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Light gathering capacity of fiber optic cable

Single Slit minima $a\sin\theta = n\lambda$

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

Double Slit min $(a+b)\sin\theta = (2n+1)\lambda/2$

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

Formula

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

Single Slit minima $a\sin\theta = n\lambda$

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$\frac{}{a}$

Diff (5) opacity is double that of transparency

$b = 2x$ $\quad a$

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

$n = 1, 2, 3,$

6) Draw intensity graph single Slit

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