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He-Ne LASER :- He-Ne laser is a four-level laser.

He-Ne laser is usually constructed to operate in the red region of the visible spectrum at  $6328 \text{ \AA}$  and green region of the visible spectrum at  $5435 \text{ \AA}$  and infrared at  $1525 \text{ nm}$ .

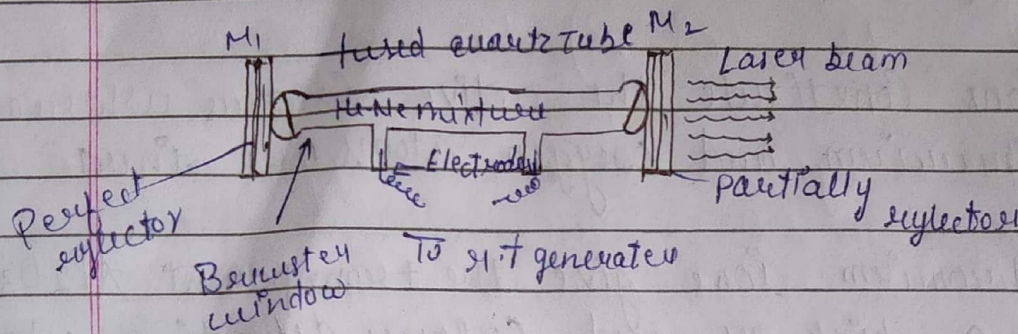


Diagram: He-Ne Laser

Working of He-Ne Laser :- The energy level diagram of He-Ne laser is shown in fig (2) when the power.

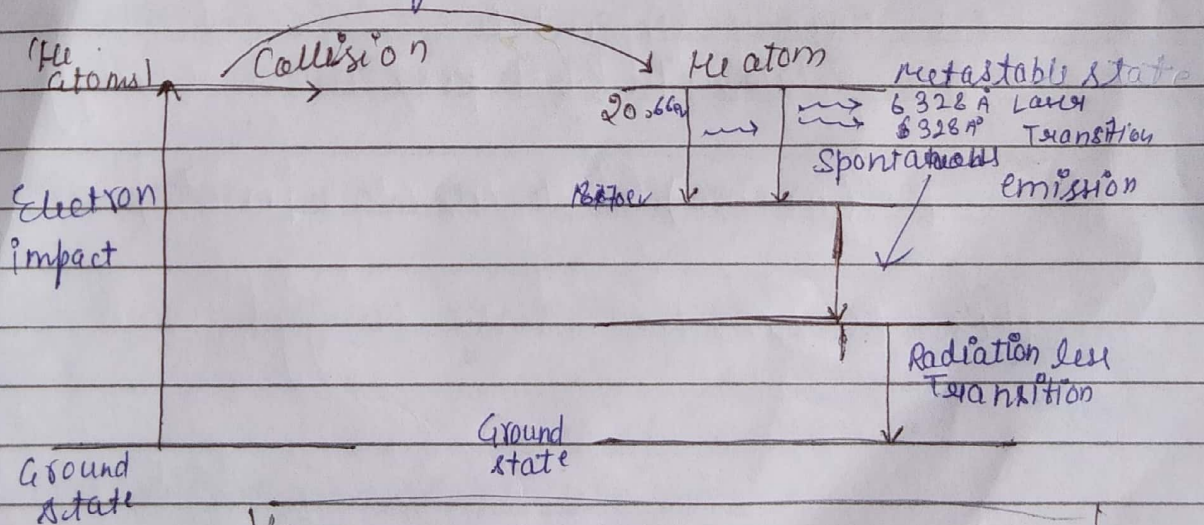


Fig 2: Energy level diagram of He-Ne laser

## Ruby Laser

- ① Ruby laser is basically  $Al_2O_3$  (Silica) crystal containing about 0.5% (by weight) of chromium atoms.
- ② ~~The~~ The  $Al^{3+}$  ions in the crystal lattice are substituted by  $Cr^{3+}$  ions.
- ③  $Cr^{3+}$  ions constitute the active centers whereas the aluminium and oxygen atoms are inert.
- ④ The chromium ions give the transparent  $Al_2O_3$  crystal a pink or red colour depending upon its concentration.