LASERS IN MEDICINE

LASERS in medical applications

- LASERS are presently used for a variety of application in medical field.
- The medical use of LASERS in suitable where there is a favourable interation between laser radiation and human issue
- The success of this interaction depends on radiation, wavelength, ability of tissue to absorb this Wavelength, delivered power on treatment area, toatal energy incident on tissue and area to be treated.

Medical treatment

- Ophthalmology
- Neurosurgery
- Gastroenterology
- Dermatology
- Gynecology
- ENT
- Burn therapy
- Urology

Ophtalmology

- Treatment of detached retina
- Coagulation in diabetic retinopathy

Neurosurgery

- Treatment of tissue in skull and spine

Gastroenterology

- Treatment by coagulation of lower gastro intestinal fact

Dermatology

- Removal of skin imperfutions by laser irradiation

Gynecology

- Fertility microsurgery
- Fallopian tube reconstruction

ENT

- Ear, nose and throat surgery

Basic principles of laser medical applications

- All the application of laser are based on the fact that laser could produce high pboton flux on a localised sport.
- Such light power density causes a broad spectrum of effects and one can utilize these for different medical applications

Types of laser medical applications

- Two types of medical applications
  1. Photo-thermal applications
  2. Photo-chemical applications

Photo thermal applications

- Laser heating of tissueis used from TWO different surgical function photocoagulation and cutting as a “scalpel”
- Photo thermal applications in laser are used in ophthalmology to treat various eye problems.
- Retinal bleeding
- Excessive growth of blood vessels in the eye caused by diabetes.
- Spot welding for reattaching retinas.
- Here, opthalmogists use photo coagulation effect..
- i. e. Heating the tissue at 60 degree to denature the proteins..