

CANCER BIOLOGY

UNIT - I

Regulation of Cell cycle- Mutations that cause changes in signal molecules- effects on receptor- signal switches- tumour suppressor genes- Modulation of cell cycle-in cancer- Different forms of cancers- Diet and cancer.

UNIT - II

Chemical Carcinogenesis- Metabolism of Carcinogenesis- Natural History of Carcinogenesis- Targets of Chemical Carcinogenesis- Principles of Physical Carcinogenesis- X-Ray radiation – Mechanism of radiation Carcinogenesis.

UNIT - III

Oncogenes- Identification of Oncogenes- Retroviruses and Oncogenes- detection of Oncogenes- Growth factor and Growth factor receptors that are Oncogenes- Oncogenes / Proto Oncogenes activity- Growth factors related to transformations.

UNIT - IV

Clinical significances of invasion- heterogeneity of metastatic phenotype- Metastatic cascade- Basement membrane disruption- Three step theory of invasion- Proteinases and tumour cell invasion.

UNIT - V

Different forms of therapy- Chemotherapy- Radiation Therapy- Detection of Cancers- Prediction of aggressiveness of Cancer- Advances in Cancer detection.

Reference Books

1. King R.J.B., *Cancer Biology*, Addison Wesley Longmann Ltd, U.K., 1996.
2. Ruddle R.W., *Cancer Biology*, Oxford University Press, Oxford, 1995.
3. Maly B.W.J., *Virology a practical approach*, IRL press, Oxford, 1987.
4. Dunmuck N.J and Primrose S.B., *Introduction to modern Virology*, Blackwell Scientific Publications, Oxford, 1988.