

**Swami Rama Himalayan University,
Swami Ram Nagar, Jolly Grant, Dehradun-248016**

Subject Code: PHDOC110

Subject Name: Advances in Oncology Sciences

100 Marks

TIME: 3 HRS

Unit I

Biological basis of cancer/Molecular biology of cancer
Aberrant metabolism during cancer development,
Tumor markers; cellular proto-oncogenes- oncogene activation.
Growth factors-EGF, TNF- and TGF- and growth factor receptors.
Signal transduction in cancer. Role of transcription factors.

Unit II

Etiology/ Carcinogens
Tobacco
Oncogenic viruses
Inflammation
Chemical factors
Physical Factors
Dietary Factors
Life Style
Cancer Epidemiology, Common cancer, Worldwide & in India

Unit III

Cancer Control strategies
Primary Prevention, Early Diagnosis, common symptoms, cancer screening
Cancer Treatment – Modalities
Palliative care, Pain control, end of life care.
Psychosocial issues in cancer care

Unit IV

Common anticancer drugs - Anti-neoplastic drugs, biological drugs, Different forms of therapy,
Chemotherapy, radiation Therapy, gene therapy and Immuno-therapy: advantages and limitations.
Epigenetics of cancer, Identification of targets for drug development. Clinical trials

Unit V

Epigenetics: Role of DNA methylation in gene silencing- epigenetic silencing of tumor-suppressor
genes, Apoptosis in cancer-Cell death by apoptosis, role of caspases; Death signaling pathways-
mitochondrial and death receptor pathways.