Paper ID- 281

# POST GRADUATE EXAMINATION, APRIL - 2019

## MD RADIATION ONCOLOGY

(PAPER ONE)

## BASIC SCIENCES RELATED TO ONCOLOGY, RADIATION PHYSICS AND RADIOBIOLOGY

**[Time allotted: Three hours]** **[Max Marks: 100]**

**Note:** Attempt all questions
Illustrate with suitable diagrams.

**Q. 1.** Define LET, RBE and OER. Draw a graph to show relationship between LET, RBE and OER. **(20)**

**Q. 2.** Describe the cell cycle. What is the most radiosensitive phase of cell cycle? **(20)**

**Q. 3. Describe briefly:** **(3 x 10 = 30)**

**a.** Describe various parts of 6 MV LINAC

**b.** Thermo luminescent dosimeter

**c.** Lymphatic drainage of testis

**Q. 4. Write short notes on:** **(5 x 6 = 30)**

**a.** Iridium 192

**b.** LQ model

**c.** Therapeutic ratio

**d.** Draw a diagram of lymph node stations in neck

**e.** Compton effect

X

Paper ID- 282

# POST GRADUATE EXAMINATION, APRIL - 2019

## MD RADIATION ONCOLOGY

### (PAPER TWO)

### PRINCIPLES AND PRACTICE OF RADIOTHERAPY

**[Time allotted: Three hours]** **[Max Marks: 100]**

**Note:** Attempt all questions
Illustrate with suitable diagrams.

**Q. 1.** Discuss in details pre-management and management of lower one third carcinoma esophagus. **(20)**

**Q. 2.** Discuss the role of radiation and its technique in the treatment of medulloblastoma. **(20)**

**Q. 3.** **Describe briefly:** **(3 x 10 = 30)**

**a.** Management of T2N0 M0 carcinoma nasopharynx

**b.** Prophylactic cranial irradiation in small cell carcinoma lung

**c.** Management of T1 carcinoma glottis

**Q. 4.** **Write short notes on:** **(5 x 6 = 30)**

**a.** Neoadjuvant radiotherapy in cancer rectum

**b.** Altered fractionation in head and neck cancers

**c.** Extended field radiotherapy in carcinoma cervix

**d.** Biological basis of HDR brachytherapy

**e.** Interval cytoreduction in carcinoma ovary

X

Paper ID- 283

# POST GRADUATE EXAMINATION, APRIL - 2019

## MD RADIATION ONCOLOGY

### (PAPER THREE)

### CHEMOTHERAPY, BIOLOGICAL THERAPY AND PALLIATIVE CARE

**[Time allotted: Three hours]** **[Max Marks: 100]**

**Note:** Attempt all questions
Illustrate with suitable diagrams.

**Q. 1.** What are microtubules? Name anti-microtubule agents used in cancer treatment, describe their main therapeutic uses with dosage and major toxicities. **(20)**

**Q. 2.** Discuss role of neoadjuvant chemotherapy in management of breast cancer. How will you treat a treat a pre-menopausal lady with carcinoma breast T3N0M0, ER, PR negative and HER2 positive? **(20)**

**Q. 3. Describe briefly:** **(3 x 10 = 30)**

**a.** Management of chemotherapy induced nausea and vomiting

**b.** Pharmacological treatment for smoking cessation

**c.** Management of febrile neutropenia post chemotherapy

**Q. 4. Write short notes on:** **(5 x 6 = 30)**

**a.** Venous thrombo-embolism in cancer

**b.** Cancer related fatigue

**c.** WHO guidelines for cancer pain management

**d.** Parenteral nutrition

**e.** Metronomic chemotherapy in head and neck cancer

X

Paper ID- 284

# POST GRADUATE EXAMINATION, APRIL - 2019

## MD RADIATION ONCOLOGY

### (PAPER FOUR)

### RECENT ADVANCES IN RADIOTHERAPY AND ONCOLOGY

**[Time allotted: Three hours]** **[Max Marks: 100]**

**Note:** Attempt all questions
Illustrate with suitable diagrams.

**Q. 1.** Discuss the image guided radiotherapy and 4D planning. **(20)**

**Q. 2.** What are the recent advances in brachytherapy? Discuss image assisted brachytherapy in carcinoma cervix. **(20)**

**Q. 3. Describe briefly:** **(3 x 10 = 30)**

**a.** Helical tomotherapy in radiation therapy

**b.** Changing paradigms in lung cancer treatment

**c.** High microsatellite instability (MSI-H)

**Q. 4. Write short notes on:** **(5 x 6 = 30)**

**a.** Tyrosine-kinase inhibiters used in oncology

**b.** Kaplan-Meier survival curve

**c.** Liquid biopsy

**d.** Kaposi's sarcoma

**e.** Human cancer viruses

X