

POST GRADUATE EXAMINATION, APRIL/MAY-2022

**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.** Describe the Lymphatic drainage of carcinoma cervix and discuss in detail the staging of carcinoma cervix? **(20)**
- Q. 2.** What are the personal monitoring devices used in radiation area. Explain TLD in detail. **(20)**
- Q. 3. Describe briefly:** **(3 x 10 = 30)**
- a. 5R's of radiobiology
 - b. Clinical significance of Compton effect
 - c. What is Radioactivity? Describe decay law with formula
- Q. 4. Write short notes on:** **(5 x 6 = 30)**
- a. Time dose fractionation
 - b. Decay Scheme of Cobalt 60
 - c. Cell survival curve
 - d. Reoxygenation
 - e. Population based cancer registry

X

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**MD RADIATION ONCOLOGY
(PAPER TWO)**

PRINCIPLE AND PRACTICE OF RADIOTHERAPY

[Time allotted: Three hours]

[Max Marks: 100]

Note: Attempt all questions
Illustrate with suitable diagrams.

Q. 1. Describe the radiation treatment technique in carcinoma nasopharynx. **(20)**

Q. 2. Describe the role of radiotherapy and various techniques used for management of T1N0M0 carcinoma larynx. **(20)**

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

- a. Discuss the various radiosensitizers used in radiotherapy
- b. Altered Fractionation in Radiotherapy
- c. Management of stage III A carcinoma cervix

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

- a. Tumor Lysis Syndrome
- b. Treatment of various grades of radiation induced mucositis
- c. Treatment of Tracheo Esophageal Fistula in carcinoma esophagus
- d. Enumerate the indications for use of MUPIT implant.
- e. APBI

X

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**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 the principles of combination chemotherapy? Draw the diagram of cell cycle and anti-cancer drug action. **(20)**

Q. 2. Describe in detail the management of castration resistant cancer prostate. **(20)**

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

- a. Anti-microtubule agents
- b. Target therapy in cancer colon
- c. Management of Gestational trophoblastic tumors

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

- a. Calculation of Body Surface Area
- b. Determination of Target Area under the Curve (AUC)
- c. Pain management as per WHO guidelines in cancer patients
- d. Chemotherapy in triple negative carcinoma breast
- e. Role of anticoagulants in cancer management

X

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**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. What is proton therapy? Give its physical rationale and therapeutic applications. **(20)**

Q. 2. Discuss rationale behind IGRT and write about the respiratory gating. **(20)**

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

- a. VMAT as advanced treatment technique in radiotherapy planning
- b. Adaptive radiotherapy
- c. SBRT in early lung cancer

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

- a. EPID (Electronic portal image device)
- b. Pulsed dose rate brachytherapy
- c. HPV vaccine
- d. Onco-genes
- e. Anti-angiogenesis therapy in cancer treatment

X