

POST GRADUATE EXAMINATION, MAY- 2020

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 role of CT-simulation in modern radiotherapy practice. (20)

Q. 2. Mention various radiobiological models used in radiotherapy. Give details of L.Q. model. (20)

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

- a. Compton effect
- b. Tumor markers in diagnosis of cancers
- c. Role of HPV in cancer

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

- a. Dynamic wedges
- b. Bragg's peak
- c. MOSFET
- d. Multileaf collimator
- e. Biological dosimetry

X

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(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 principles and techniques of radiation treatment early carcinoma prostate using external beam radiotherapy and brachytherapy. **(20)**

Q. 2. Describe in detail the diagnostic and investigative work up for a suspected case of carcinoma nasopharynx. Discuss in detail the line management and radiotherapy techniques used in carcinoma nasopharynx. **(20)**

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

- a. Indications of adjuvant radiotherapy in Ca breast
- b. The role of radiotherapy in the management of Hodgkin's disease
- c. Classification and staging of testicular tumors

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

- a. Role of intraluminal brachytherapy in Ca oesophagus
- b. Role of EBRT in seminoma testis
- c. RECIST & PERCIST response criteria
- d. Screening for cancer colon
- e. Radiation reactions in head & neck radiotherapy

X

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(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 is the rationale of using concurrent chemo-radiotherapy in solid cancers? Illustrate with clinical evidence in at least one cancer site. **(20)**
- Q. 2.** What is the WHO ladder for pain control in cancer? How should we manage palliation in terms of pain control? Discuss the status in India. **(20)**
- Q. 3. Describe briefly:** **(3 x 10 = 30)**
- a. Cetuximab
 - b. Current management of gestational trophoblastic tumors
 - c. Quality of life studies with emphasis on patient reported outcomes
- Q. 4. Write short notes on:** **(5 x 6 = 30)**
- a. Taxanes
 - b. Tumor lysis syndrome
 - c. Management of high dose methotrexate toxicities
 - d. Two examples of immunotherapy in cancer
 - e. Drugs crossing the blood brain barrier (anti-cancer agents)

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. Describe with the help of a diagram the functioning of proton beam therapy unit and enumerate the indications and limitations. **(20)**

Q. 2. Describe the recent advances in the molecular profile of non-small cell lung cancer (NSCLC) and enumerate the various TKI's used in the management of NSCLC based on mutations. **(20)**

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

- a. Role of accelerated partial radiotherapy in breast cancer
- b. Role of PET CT scan in oncology
- c. SBRT and their role in liver lesions

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

- a. MGMT methylation and IP19q status
- b. Super selective chemotherapy
- c. P53 gene
- d. Bragg peak
- e. Tomotherapy

X