

Write short Notes on:

1. Describe principles and radiobiology of hyperthermia
2. Principles and basis for chemoradiation: discuss advantages and disadvantages of this therapy.
3. What is therapeutic ratio and how it helps in clinical application of radiotherapy.
4. Discuss the biological basis of radiation oncology and describe the intention of radiation treatment.
5. Compare empirical versus evidence based radiotherapy.
6. Describe LDR, MDR, HDR and PDR brachytherapy. What do you understand by image based brachytherapy and its usefulness.
7. Proton beam therapy: its source and clinical applications.
8. What is beam modification and its method? Describe wedge filters in detail.
9. Describe the radiobiological basis of fractionation and describe various fractionations.
10. Discuss the role of chemo-radiation in carcinoma esophagus. Describe the regimen and associated complications and their management.

Write short Notes on:

1. Describe taxanes and their method of administration. Discuss the role of taxanes in the management of breast cancer.
2. Describe the role of elective para-aortic lymph node irradiation of carcinoma of uterine cervix and discuss the technique in detail.
3. What are different unsealed radionuclides? Discuss their physical characteristic and needfulness in bone metastasis.
4. Describe the role of radiation in epithelial ovarian tumors at present.
5. Discuss the role of radiation and its technique in the treatment of medulloblastoma.
6. What is PNET? Discuss its management with special emphasis on role and regimes of chemotherapy.
7. Describe various modifiers used to counter associated chemotherapy toxicities.
8. Describe the management of retinoblastoma with emphasis on combined modality treatment.
9. Discuss the role, technique of radiation in glioblastoma multiforme. Describe the usefulness of temozolamide in its management.
10. What is targeted therapy? What are various group of drugs used for targeted therapy. Discuss its role in the treatment of Ca.Colon

Write short Notes on:

1. What is cyber knife? Describe its construction and usefulness in radiotherapy.
2. What is the basis for accelerated partial breast irradiation? Describe different methods for APBI.
3. What is “radiation by stander effect” and how it is applicable in clinical oncological practice.
4. Discuss the principle of PET scan? How is it superior to CT scan? What is its application in radiotherapy planning?
5. Describe the role of IMRT in the treatment of carcinoma prostate; describe the steps involved in treatment planning and execution of this treatment.
6. What is CHART? Describe this fractionation regimen in detail and its results in head & neck cancers.
7. What is the rationale of ~~intra~~ operation radiotherapy? Describe the procedure and methods of irradiation and its clinical application.
8. What is a CT simulator, how it differs from conventional CT scan. Discuss its role in radiotherapy treatment planning.
9. What is a clinical trial? Discuss its different phases.
10. What are the cumulative and differential dose volume histograms (DVH)? What are the advantages and limitations of DVH?

Write short Notes on:

1. Describe ICRU-50 & 60. Discuss their application in day to day practice of radiation oncology.
2. Describe the principles of radiation protection. How will you observe and apply them in radiotherapy department.
3. What is preventive oncology and its usefulness. Discuss the various methods of prevention of breast cancer.
4. Discuss the skin and mucosal radiation reactions during curative radiotherapy. Describe the mechanisms and grades and their treatment.
5. Describe short notes on stochastic effects of whole body irradiation.
6. What is tumor angiogenesis? Describe the pathophysiology of activators and inhibitors in its pathology.
7. Define LET, RBE and OER and their implications in radiotherapy.
8. What are various physical dose models in radiotherapy? Discuss the basis and application of Linear Quadric Equation (LQ).
9. What do you mean by screening for cancer, what are aims of screening, Discuss various methods of screening for breast cancer.
10. Discuss the role of radiotherapy in the treatment of benign diseases.

Write short notes on:

1. Describe in brief fundamentals of radiobiology
2. Describe and define various tumor/target volumes for clinical radiation purposes
3. Comparison of x knife & gamma knife
4. Fundamentals of chemo radiation
5. Describe the social aspects of medical physics
6. Radiation dose tolerance of at least 20 sites in human body
7. Classify uncertainties in radiotherapy & describe them in point wise manner
8. Describe DNA damage by radiation & define radio sensitivity and radio curability
9. Write notes on therapeutic ration, Dose-time factors and its impact on local tumor control & survival
10. Describe your initiatives for pre-intra & post radiation care of the patient receiving radiation therapy alone

Write short notes on:

1. Discuss the staging of Carcinoma Nasopharynx and treatment of stage I Carcinoma Nasopharynx
2. Trastuzumab
3. Enlist radioactive isotopes used for the therapeutics of human diseases. Describe at least three of them in details with regards to their oncological application
4. A 38-year-old lady presents with cT₃ N₁ M₀ infiltrating duct carcinoma of the left breast. Discuss the loco regional treatment options for the patient
5. Enumerate the indications for craniospinal irradiation. Describe the technique used to deliver neuraxis radiation
6. Boron capture therapy & its application.
7. Briefly discuss the role and delivery of pre-operative radiotherapy in carcinoma rectum
8. Neoadjuvant therapy for locally advanced carcinoma prostate
9. Biological therapy for non-small cell lung cancer
10. Briefly discuss the effects of radiation to lung

Write short notes on:

1. Describe tomotherapy
2. What is PET-CT. Describe the principle & role in management of cancer
3. Serum Ca 19.9 Determinations
4. EGFR
5. Rituximab
6. What is interval cytoreduction in Carcinoma Ovary
7. Stem cell treatment
8. Recent advances in organ preservation with special reference to radio therapy applications
9. Photodynamic therapy
10. HER-2/Neu oncogene

Write short notes on:

1. Various phases of the cell cycle and their vulnerability by specific chemotherapy drugs & radiation. (cell phase specific cytotoxicity of radiation & chemotherapy)
2. Enlist extrapulmonary symptoms of cancer of lung. Explain the biological basis of these extra pulmonary symptoms
3. Renal management of the patients receiving radiation and chemotherapy for various cancers & various sites. Detail the management for multiple myeloma, lymphoma & cancer cervix
4. Nutritional aspects of patients receiving chemotherapy and radiation therapy. Its standardization in management of head & neck cancers.
5. Reverse planning in radiotherapy.
6. Targeted therapy in cancer. Describe in point-wise manner
7. Method of acquiring resistance by a malignant cell to chemotherapy and radiotherapy
8. The tumour markers that can detect or point towards cancer in human body even before the symptoms have appeared
9. Methods of monitoring the treatment response & follow up in the patients receiving combined modality treatment (surgery chemo & radiotherapy)
10. Biological climate modifiers in radiation therapy

Write short notes on:

1. Tumor Lethal Dose.
2. Percentage Depth Dose and its application in radiotherapy.
3. Role and techniques of radiation treatment in carcinoma rectum.
4. Prophylactic cervical irradiation in head & neck cancer.
5. Radiation treatment of carcinoma cervix Stage – I.
6. Draw and discuss various radiation fields as applied to various stages and as applied to the biological behaviour of Ca Nasopharynx. Define boundaries and structures therein the various fields.
7. Principles of management of SVC obstruction syndrome in lung cancer.
8. Role and application of surface mould therapy in skin cancer.
9. Role of radiation in Wilm's tumor.
10. Role and principles of IMRT in the treatment of Prostate cancer.

Write short notes on:

1. Craniospinal irradiation.
2. Fundamentals of comprehensive oncological management of PNET group of tumors with special reference to its biological behaviour.
3. Dose rate effect in radiotherapy.
4. Target volumes in radiotherapy.
5. Multistage carcinogenesis.
6. Interstitial brachytherapy.
7. Management of extragonadal germ cell tumors.
8. IGRT.
9. Imatinib Mesylate.
10. Epipodophyllotoxins.

Write short notes on:

1. Radiobiology of HDR, LDR and PDR
2. Results of Intra Operative Radiation therapy as applied to various sites. List the sites and results.
3. History of Chemo-sensitized radiation in India as you know. Its biological basis and sites where best results are achieved.
4. IMRT Fundamental difference with 3 DC RT.
5. Compare X-Knife and Gamma Knife at least 9 characteristics for comparison for both.
6. Radio therapeutics of Breast Conservation with or without surgery.
7. Principles of Hyperthermia and Radiation.
8. New Radiation Substances in therapeutic radiology and their application.
9. Brief review of literature in pre op radiation in cervix and its results as compared with chemo RT.
10. What is new and old in role of radiotherapy in ovarian cancers?

Write short notes on:

1. Discuss the principles underlying the concept of fractionated radiotherapy.
2. Compare the advantages and disadvantages of linear accelerators and Co⁶⁰ teletherapy machines.
3. Pathology of Hodgkin's disease.
4. Chemical radioprotectors in radiotherapy.
5. Discuss the effects of radiation on the (a) central nervous system.
(b) kidneys.
6. Multileaf collimators
7. Simulators.
8. Leukoplakia.
9. Kaplan Meier Curves.
10. Describe the anatomy of the breast and its drainage areas with relevance to the management of carcinoma breast.