

RADIO THERAPY

PAPER- I

Time : 3 hours
Max. Marks : 100

RTH/D/11/41/I

Attempt all questions in order.
Each question carries 10 marks.

1. a. What is evidence collection in oncological sciences? 3+4+3
b. How do you carry out Interim Analyses?
c. Discuss in brief UICC (IACR) recommendations for follow up in cancer patients?
2. a. Describe Patterson & Parker Rules. 5+5
b. What are their different applications in Brachytherapy?
3. a. Enumerate the various aspects of Radiation treatment planning. 5+5
b. Describe its importance on the basis of fundamentals of ICRU.
4. What are various methods applied for brachytherapy dose calculations in gynaecological cancers? 10
5. a. What is 'Gynaecological oncologic emergencies'? 3+3+4
b. Enumerate them.
c. Describe management of one of them.
6. a. Compare in a tabular form various radiation fractionation schedules and their specific indications. 5+5
b. Describe in brief their early and late normal tissue effects.
7. a. Define and describe wedge filters and compensators. 5+5
b. Procedures involved in deciding or prescribing both as per the requirement.
8. a. What are vaccines that prevent cancers? 5+5
b. What are the incidences of those cancers that can be brought down by these vaccines?
9. Comment on economizing oncological management for patient from poor socio-economical strata. 10
10. Describe procedures involved in commissioning of a Linear Accelerator. 10

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PAPER- II

Time : 3 hours
Max. Marks : 100

RTH/D/11/41/II

Attempt all questions in order.
Each question carries 10 marks.

1. What are the components of "Risk Stratification" in carcinoma of Prostate? 3+4+3
 - a. Components
 - b. Description of Groups
 - c. Briefly about therapy decisions
2. a. What are the fundamentals of pre-operative and post-operative radiotherapy? 4+3+3
 - b. Compare both the strategies in Carcinoma Rectum.
 - c. Mention few results of important trials.
3. Describe Radiotherapy in pleomorphic adenoma of parotid: 4+4+2
 - a. Its indications
 - b. Its technique
 - c. Results
4. What is the concept of prophylactic irradiation in small cell lung cancer? Briefly give results of such therapy. 5+5
5. Write staging system for retinoblastoma. Enumerate treatment modality as per the stage of the disease and complications of various radiotherapy methods in retinoblastoma. 4+3+3
6. Compare the physical properties of any five isotopes used in Brachytherapy. 10
7. Which chemotherapy protocol is considered safest during second and third trimester of pregnant women with breast cancer and why? 5+5
8. Describe various chemotherapy regimens for relapsed Hodgkin's Lymphoma. Enumerate components of such comprehensive therapy. 5+5
9. Discuss justification of monoclonal antibodies in cancer therapy. Enumerate various monoclonal antibodies and malignancies treated by them. 5+5

P.T.O.

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PAPER - II

Time : 3 hours
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10. a. What is carcinoma peritonei? 4+3+3
b. Describe various methods of intra-peritoneal chemotherapy in brief.
c. Enumerate drugs in a tabular form that can be given intra-peritoneally with their relative concentrations when compared to systemic administration.

P.T.O.

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PAPER- III

Time : 3 hours
Max. Marks : 100

RTH/D/11/41/III

**Attempt all questions in order.
Each question carries 10 marks.**

1. Describe VEGF and angiopoietin as applied oncotherapeutics. 5+5
2. Describe recent advances in management of carcinoma bladder. 10
3. What is International Prognostic Index for Hodgkin's Lymphoma? 10
4. Describe the oncotherapeutic use of thalidomide along with a brief note on its "historical use". 8+2
5. What is the rationale behind integrating molecular targeting approaches with radiation? Give examples of clinical situations where it has given encouraging results? Enlist associated complications. 4+3+3
6. What are recent advances in screening of oral cancers? Enumerate briefly the gadgetry and the Lab techniques. 4+3+3
7. What are the recent advances in very early and very late stage cancers of uterine cervix? 5+5
8. Briefly describe the rationale and techniques of partial breast irradiation and its results. 3+3+4
9. Describe "WHO Ladder" of pain management. What do you understand by term "Cyclical analgesics" 8+2
10. Discuss briefly on management of cancer of pancreas. 10

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PAPER- IV

Time : 3 hours
Max. Marks : 100

RTH/D/11/41/IV

Attempt all questions in order.
Each question carries 10 marks.

Write short notes on :-

1. a. Decay scheme of Cobalt 60 5+5
b. What will be the activity of 12000 Curie Cobalt-60 source after 5 years?
2. How will you classify "Radiation Damage"? Enumerate various methods of radiation damage repair. 5+5
3. What is linear quadratic isoeffect model? How best can we utilize this modality clinically? 5+5
4. Describe how anatomy and lymphatic drainage plays an important role in radiation treatment planning? Exemplify it with treatment of "glottic carcinoma". 5+5
5. Describe how to evaluate the radiotherapy plan generated with respect to dose volume histogram and biological indices. 10
6. Define stereotactic radiosurgery and stereotactic radiotherapy. What are the radio-biologic considerations in relation to above? Describe in brief radio-surgical techniques employed in treatment of tumour. 2+3+5
7. Discuss in brief cell survival curve and its implications in radiation research. 5+5
8. Describe biological basis of various CNS tumors. Draw radiation fields of craniospinal radiation with demarcations. 5+5
9. What is immunohistochemistry and how it forms the basis of identifying cell of origin in metastasis of unknown origin? 4+6
10. Enumerate the conditions where ionizing radiations are used in non malignant disease. Describe treatment planning and dose schedule for one of them. 5+5
