

**PG Degree Supplementary Examinations in Radiation Oncology
(MD) April 2026**

Paper III - Clinical Oncology & Cancer Chemotherapy

Time: 3 hrs

Max marks:100

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

Essay:**(20)**

1. A 62-year-old male with ECOG Performance Status 1 is diagnosed with Stage IIIA (cT3N2M0) non-small cell lung carcinoma. He is deemed unresectable after multidisciplinary evaluation.
 - a) Discuss the role of molecular testing and biomarker evaluation in Stage III NSCLC. Enumerate actionable mutations and explain how these influence systemic therapy decisions.
 - b) Outline the standard approach to definitive concurrent chemoradiotherapy in unresectable Stage III NSCLC, including indications, chemotherapy regimens, timing (concurrent vs sequential), and evidence supporting this strategy.
 - c) Describe radiotherapy planning in definitive treatment.
 - d) Discuss the role of consolidation immunotherapy. (5+5+5+5)

Short essays:**(8x10=80)**

2. Discuss molecular risk stratification in low-grade glioma (LGG) and role of molecular. Outline the indications for postoperative radiotherapy in LGG and describe recommended dose, fractionation schedules, and integration with chemotherapy. (5+5)
3. Discuss the scientific rationale and principles behind combination chemotherapy in cancer treatment. Explain the integration of combination chemotherapy with radiotherapy, including biological basis, sequencing, clinical indications, and toxicity considerations. (5+5)
4. Discuss the mechanisms by which radiosensitizers enhance the effect of radiotherapy. Describe its clinical applications. (5+5)
5. Discuss the mechanism of action of BRAF inhibitors and the molecular basis for their use in oncology. Describe its role in melanoma, benefits and potential toxicities. (5+5)
6. Discuss the mechanism of action of trastuzumab and its role in the management of HER2-positive breast cancer. Discuss the implications of anti-HER2 therapy on radiotherapy. (5+5)
7. HIPEC.
8. Discuss the management of craniopharyngioma.
9. Enumerate hormonal therapy in carcinoma breast.
