

Q P Code: 101516

Reg. No.:.....

**D.M. (Paediatric Oncology) Degree Regular/Supplementary
Examinations December 2025**

Paper I – Basic and Applied Sciences as related to Pediatric Oncology

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. List the hall mark features and management of any Five non-rhabdomyosarcoma soft tissue sarcomas in children.

Short essays: (8x10=80)

2. What are the differences between germline and somatic mutations. Provide pediatric examples.
3. Explain the role of the p53 protein in tumor suppression and its relevance in pediatric tumors.
4. What are the key differences between phase I, II and III clinical trials in pediatric oncology. Give an example of each from recent studies.
5. What is the 'two-hit' hypothesis and how does it apply to retinoblastoma. What is the practical role of testing for the RB1 gene mutation for patients with retinoblastoma in India.
6. Describe the components of the tumor microenvironment.
7. What are microRNAs and their relevance in pediatric cancer regulation.
8. What is the Warburg effect and how is it utilized in PET imaging of pediatric tumors. Describe the Deauville score for interpreting a PET scan.
9. Compare 3D conformal radiotherapy, IMRT and proton therapy in terms of precision, normal tissue sparing and clinical use in pediatric oncology.
