

**THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY**

**[MD 0522]**

**MAY 2022**

**Sub. Code: 2036**

**M.D. DEGREE EXAMINATION**

**BRANCH IX – RADIO THERAPY  
BRANCH XXVI - RADIATION ONCOLOGY**

**PAPER II – GENERAL PRINCIPLES OF RADIOTHERAPY  
INCLUDING RADIOBIOLOGY AND ONCOLOGY**

*Q.P. Code: 202036*

**Time: Three Hours**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 15 = 30)**

1. What are the prerequisites of an ideal Brachytherapy source? Give the note on Cesium 137, Ir-192 and Co-60 Source.
2. Describe phases of cell cycle. What is signal transduction? Discuss its role in Oncology.

**II. Write notes on:**

**(10 x 7 = 70)**

1. Boron – neutron Capture theory.
2. (a) Describe potential Doubling time.  
(b) The Oxygen effects.
3. Define Biological Equivalent Dose and biological Effective Dose.
4. Oncogenes and Tumour Supporter Genes.
5. Total Body Irradiation.
6. Biological Modifiers.
7. Advantages and disadvantages of Neo adjuvant Chemo radiation. Discuss NACT Schedule in 2 Cancers where it is commonly practiced.
8. Cell survival Curves.
9. Premalignant lesions of vulval carcinoma.
10. Short Notes on Technetium 99 scan and I 1131 Scan.

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