QP Code: 107391 **Reg. No.....**

Post M.Sc Diploma in Radiological Physics Supplementary Examinations June 2018

Radiation Therapy

Time: 3 hours **Maximum Marks: 100**

- **Answer all questions**
- **Use of Calculators/physical and mathematical tables permitted.**

Essays **(2x14 = 28)**

1. Draw a block diagram of typical linear accelerator and explain its major components. How many monitor units are required to deliver 200cGy at depth 10 cm for field size of 10x10 cm2 in SSD setup for a photon beam of 6MV. (PDD for 10x10 cm2 = 66.8; Output for 10x10 cm2 = 1.000). (9+5)

2. Explain acceptance, commissioning and quality assurance of HDR brachytherapy unit. Describe mammosite and its uses. (9+5)

Short Essays **(4x8=32)**

3. Role of TPS in radiotherapy
4. Explain MLC and micro MLC and their advantages.
5. What is iso-center. Why we need beam modifying devices in radiotherapy and mention some examples.
6. Explain terms TMR, TAR, SSD and SAD.

Short Notes **(10x4=40)**

7. Wedge
8. Collimator
9. Profile
10. Dmax
11. Skin dose
12. IMRT
13. Electron applicators
14. Immobilizations.
15. Field size
16. SBRT

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