QP CODE:201018 **Reg.No.....**

Second Year B.Sc MRT Degree Supplementary Examinations August 2017

RADIATION PHYSICS I

Time : 3 Hours **Total Marks:100**

- **Answer all questions**

Essays: **(3x10=30)**

1. Describe in detail the basic interactions of radiation with matter. Explain its clinical importance.
2. Explain the working of a free air ionization chamber with the help of a neat diagram. Mention its advantages and disadvantages.
3. Discuss the basic principle of computed tomography (CT). Explain how a cross sectional image is formed using CT machine.

Short notes: **(8x5=40)**

4. Development of an X-ray film
5. Line focus principle
6. Rare earth screens
7. TLD
8. K-edge filters
9. Xeroradiography basic principle
10. Modes of heat transfer in stationary and rotating anode x-ray tubes.
11. Calculate the transmittance of an x-ray film if the optical density of the film is 1. What is the % of light transmitted.

Answer briefly: **(10x3=30)**

12. X-ray spectrum
13. Roentgen
14. Latitude of a film
15. Thermo luminescence
16. Electric equilibrium
17. LET
18. Auto transformer
19. Primary standard dosimeter
20. Linear and mass attenuation coefficients
21. CT no.

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