

**M.Sc Sem-3 Examination****503****Medical Physics****November-2024****Time : 2-30 Hours]****[Max. Marks : 70**

- Q.1** Explain any one gas-filled detector with principle, working, diagram & uses. [14]  
(ionization chamber or proportional counter or GM counter). Also write their advantages and disadvantages.

**OR**

- Q.1** What are semiconductor detectors? Explain its principle, working, and construction. [14]  
Give its advantages, disadvantages, and uses.

- Q.2** What are the ideal properties of a Dosimeter? Explain each of them. [14]

**OR**

- Q.2** Explain Farmer chamber and thimble chamber. Draw their diagram and label its parts. [14]

- Q.3** Explain the different neutron monitoring dosimeter. [14]

**OR**

- Q.3** Write a note on hand and foot monitors and gamma area zone monitor . [14]

- Q.4** What is gamma ray spectrometry? Explain in detail . [14]

**OR**

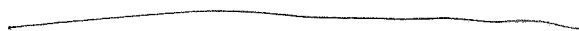
- Q.4** Explain whole body counters and air monitor for radioactive gas and particulates. [14]

- Q.5** Attempt any **seven** out of twelve from the following (Each question is of **two** marks): [14]

- (i) What is Recombination? What are the two types of recombination?
- (ii) Compare Radiographic film and Radiochromic film. (write two points each)
- (iii) What is Optical Density? Write its formula?
- (iv) What is PSDL and SSDL? Name one SSDL available in India.
- (v) What is a dosimeter? Write its general formalism.

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- (vi) Write two main points each for a plane parallel chamber and a Brachytherapy chamber. Draw diagram.
- (vii) Write a full form of RIA.
- (viii) What is the purpose of multi-channel analyser?
- (ix) Write a full form of SSNTD.
- (x) What is albedo dosimeter?
- (xi) Draw a glow curve
- (xii) Which materials are used in liquid scintillation?



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