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0304N41

Candidate's Seat No :_____

M.Sc Semester-4 Examination

508

Medical Physics

April-2024

Time : 2-30 Hours] **[Max. Marks : 70**

Q.1 Explain in detail about Telecobalt and Brachy Caesium sources. [14]

OR

Q.1 Explain relationship between Kerma, Absorbed Dose and Exposure under CPE. [14]

Q.2 Explain Bragg-Gray principle in detail and derive its mathematical expression. [14]

OR

Q.2 Explain in detail Cross calibration of chamber using intermediate beam quality. [14]

Q.3 On what basis neutrons are classified and what are they? What are the sources of neutron and neutron yield? [14]

OR

Q.3 Write a note on various neutron dosimeters and their properties and uses? [14]

Q.4 Explain about FBX dosimeter and various factors effecting FBX dosimetry. [14]

OR

Q.4 What is Chemical Dosimetry? What are the requirements for an ideal chemical dosimeter? [14]

P.T.O

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

(i) Describe about Thermal and fast neutron sources.

(ii) Write a note about ambient and directional dose equivalents, individual dose equivalent penetrating and individual dose equivalent superficial.

(iii) Write a note about radiometric units.

(iv) Define reference air kerma rate for HDR source.

(v) What are primary and secondary standards.

(vi) What is transient charged particle equilibrium (TCPE).

(vii) What is a re-entrant ionization chamber?

(viii) Name some shielding materials used for neutrons?

(ix) Name some solid state detectors?

(x) What is spectrophotometry?

(xi) What is the role of NaCl in Fricke Dosimetry?

(xii) How Does Gafchromic film Works?

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