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1604E235

Candidate's Seat No :_____

M.Sc. Sem.-4 Examination

510

Medical Physics

Time : 2-30 Hours] **April-2025** **[Max. Marks : 70**

Q.1 What is the aim of radiological protection. Describe various ICRP introduced radiation protection quantities. [14]

OR

Q.1 How the laboratories are classified depending upon the radiotoxicity of various radionuclides? [14]

Q.2 Explain in detail how the source transfer operation performed in telecobalt unit. What are the safety measures taken to reduce radiation exposure during source transfer operation? [14]

OR

Q.2 What are the different protective instruments used in particle accelerator? Explain two of them in detail. [14]

Q.3 Explain Type A package in detail. [14]

OR

Q.3 What are different treatment techniques for liquid radioactive waste. Explain them in detail. [14]

Q.4 Write short note on: [14]

1. Health surveillance of workers
2. Medical exposures

OR

Q.4 What are the responsibilities of Licensee. [14]

(P.T.O)

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

(i) What is bioassay?

(ii) What are the factors using which external hazards can ne minimized?

(iii) What are the sources of internal hazard?

(iv) How radiation monitoring is performed in teletherapy and brachytherapy.

(v) What is the workload considered during 6 MV accelerator installation planning?

(vi) Write any two special safety features in reactor?

(vii) What are the methods of solid radioactive waste disposal?

(viii) What is the full form of HEPA filter?

(ix) What are the additional requirements for packages to be transported by air?

(x) How many security levels applicable to radioactive sources? What is the objective of Security Level A?

(xi) Mention any two security measures for the security of radioactive sources.

(xii) Which type of package and transport Security level will be applicable to teletherapy sources.