YTJET/LIB/ENGIGI BM/ SEM-VIII/NM/8 may 1001)

58 1st half.13-shilpa(h)

Con. 7481-13.

(REVISED COURSE)

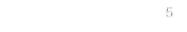
GS-2992

(3 Hours)

[Total Marks: 100

N.B.: (1)	Question	No 1 is	compul	SOLV

- (2) Attempt any four questions out of remaining six questions.
- (3) Figures to the right indicate full marks.
- (4) Use legible hand writting.
- 1. (a) Define half life of radionuclide and derive its expression.
 - (b) What are various units of radiation exposure?
 - (c) Explain alpha, beta and gamma decay process.
 - (d) List ideal characteristics of a radiopharmaceutical.



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- 2. (a) With the help of a detailed block diagram, explain the working of Gamma Camera. 10
 - (b) Discuss various quality control tests to be carried out to assess the 10 performance of Gamma Camera.
- 8. (a) What is the principle of radiation safety? How is it achieved? 10
 (b) Explain biological effects of radiation exposure. 10
- 4. (a) What is the principle involved in Radioimmuno assay. Explain this 15 technique along with its applications.
 - (b) Discuss radiotracers used in RIA along with their advantages and 5 disadvantages.
- 5. (a) Explain the various ways by which Gamma rays interact with matter. 10
 - (b) Enlist the various reconstruction techniques employed in SPECT. Explain 10 any one in detail.
- 6. (a) Explain in detail principle and working of Rectilinear Scanner with the help 10 of block diagram.
 - (b) With the help of detailed block diagram explain principle and working of Liquid 10 santillation counting system.
- 7. Write short notes on any four :-
 - (a) Gas filled detectors
 - (b) Isobaric Transition
 - (c) Selection and Localization of radiopharmacuticals
 - (d) Annihilation process
 - (e) Disposal of Biological waste.

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