

Nuclear Medicine

B.E. Sem. VIII [BIOM]

EVALUATION SYSTEM

	Time	Marks
Theory Exam	3 Hrs.	100
Practical & Oral	–	–
Oral Exam	–	25
Term Work	–	25

SYLLABUS

1. Basics of Nuclear Physics

Radioactivity, Radioactive Decay Law, Units of Radioactivity Measurement, Interaction of Radiation with Matter.

2. Detectors in Nuclear Medicine

Scintillation Detectors, and Solid State detectors.

3. Basic Instrumentation in NM

Co incidence and Anti co incidence circuits, Single and Multi Channel Pulse Height Analyzers, Gamma Ray Spectrometry.

4. In Vivo Techniques

General Principle, Radiopharmaceuticals – selection and localization, Uptake Monitoring system, Rectilinear Scanner, Gamma Camera Fundamentals, Position Circuitry and working, Computer Interface, Performance parameters, Quality Control Functions.

5. Emission Tomography Techniques

Introduction, Principles and applications of SPECT, Principles and applications of PET, System performance parameters and Quality Control Functions.

6. In Vitro techniques(Brief Description)

Introduction, Single and Double Isotope method, Radioimmunoassay, RIA Counting System, Liquid scintillation Counting system, RIA Applications.

7. Radiation Safety

External radiation Hazards & prevention, Internal radiation Exposure, Biological effects of radiation exposure, Disposal of Biological waste

References Books :

1. Textbook of Nuclear medicine (*A.F.G. Rocha*)
2. Handbook of Nuclear medicine Instruments (*Bairi, Singh, Rathod, Narurkar*)
3. Medical Radiation physics (*William Hendey*)
4. Instrumentation of Nuclear medicine (*G. Hine*)

