



SNS COLLEGE OF ALLIED HEALTH SCIENCES- COIMBATORE 35



DEPARTMENT : RADIOGRAPHY AND IMAGNG TECHNOLOGY

**SUBJECT : GENERAL PHYSICS, RADIATION PHYSICS AND PHYSICS OF
DIAGNOSTIC RADIOLOGY**

PAPER : PAPER II (UNIT 3 – RADIOACTIVITY)

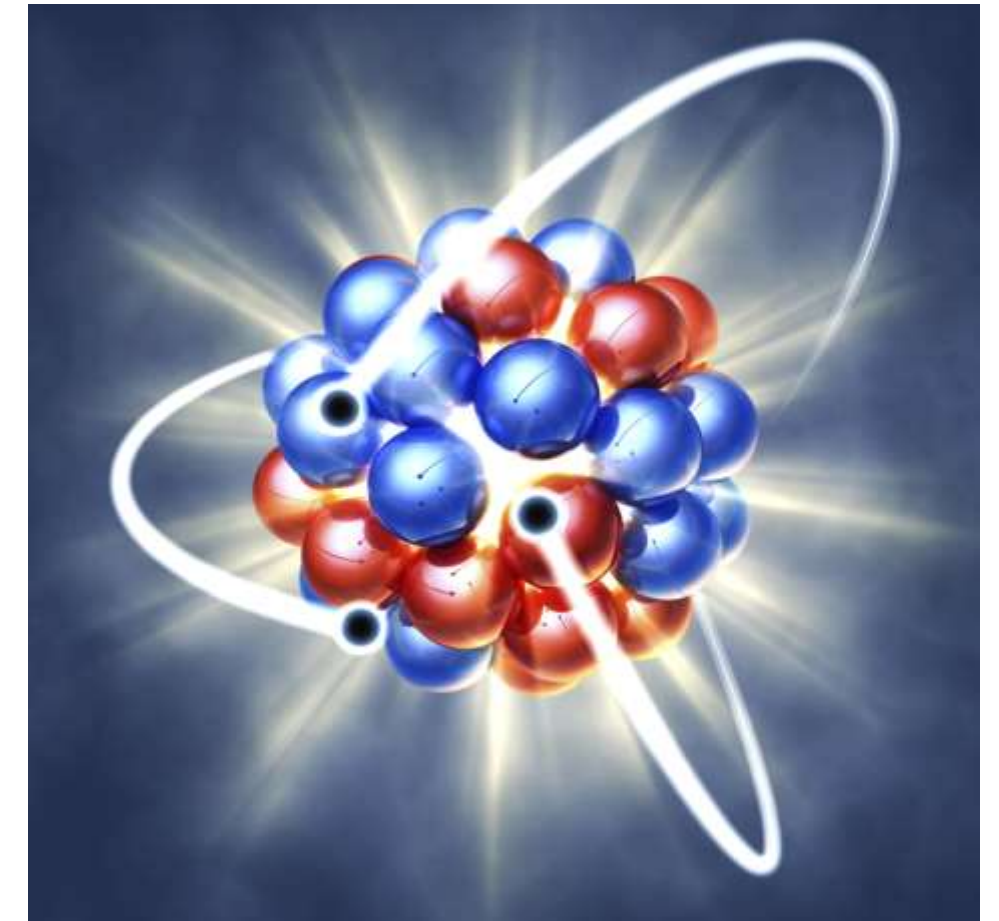
TOPIC : 1. GAMMA RAY SOURCES OF MEDICAL USES



MEDICAL APPLICATIONS OF GAMMA RAYS



- Gamma rays are electromagnetic waves with the highest energy and the shortest wave length (less than 0.1 \AA) on the EM spectrum. Because of their high energy, these rays have a high penetration power and various medical applications.





MEDICAL APPLICATIONS OF GAMMA RAYS



INTRODUCTION

- Gamma radiation is high energy radiation. It is known as electronic magnetic radiation that carries a lot of energy.
- It is highly penetrating that is emitted by certain radionuclides nucleus followed by radioactive decay.
- Gamma rays are discovered by Henri Becquerel, a French physicist, and the term was coined by Ernest rutherford



GAMMA RAY SOURCES OF MEDICAL USES



APPLICATIONS OF GAMMA RADIATION

- It helps to kill carcinogenic cells. It also helps to prevent their growth.
- Used to treat the tumours.
- Helps to preserve food for a longer period.
- Generate nuclear reactions.
- Produce valuable data about the structure of the nucleus of the atom.
- Radiations check oil pipelines to detect weak points.



GAMMA RAY SOURCES OF MEDICAL USES



APPLICATIONS OF GAMMA RADIATION

- We use it for sterilizing and disinfecting medical equipment
- Gamma radiations can detect cracks according to variation in thickness. It can also detect density change, weld defect, and non- uniformity of material.
- We also use it in the development of bombs and nuclear reactors.



GAMMA RAY SOURCES OF MEDICAL USES



CONCLUSION

- Gamma rays are used in various fields like in the medical field for radiotherapy to treat cancer, to maintain food hygiene, in art field to preserve art objects, in industries to develop more resistant materials by irradiation of gamma rays.



INTERROGATIONS



1. What is gamma radiation ?
2. Is it have high penetration power ?
3. What type of material is used to stop the gamma radiation ?



REFERENCES

1. Physics for Radiography - Hay and Hughs
2. Ball and mores essential physics radiographers, IV edition, Blackwell publishing.
3. Basic Medical Radiation physics – Stanton.
4. Christensen's Physics of Diagnostic Radiology – Christensen.
5. The physics of Radiology and Imaging – K Thayalan.



THANK YOU