



SNS COLLEGE OF ALLIED HEALTH SCIENCES- COIMBATORE 35



DEPARTMENT : RADIOGRAPHY AND IMAGNG TECHNOLOGY

**SUBJECT : QUALITY CONTROL, RADIOBIOLOGY AND RADIATION SAFETY IN
RADIODIAGNOSIS / IMAGING OTHERTHAN X-ray RELATED**

PAPER : PAPER II

**TOPIC : 1. RADIATION
2. ATOMIC STRUCTURE
3. THE NUCLEUS**



EMISSION



- The fear that Radiation Affects the Human body has Much to do with people's perception of Radiation.
- This perception stems from Nuclear Accidents Which have Transpired in Everyday life.

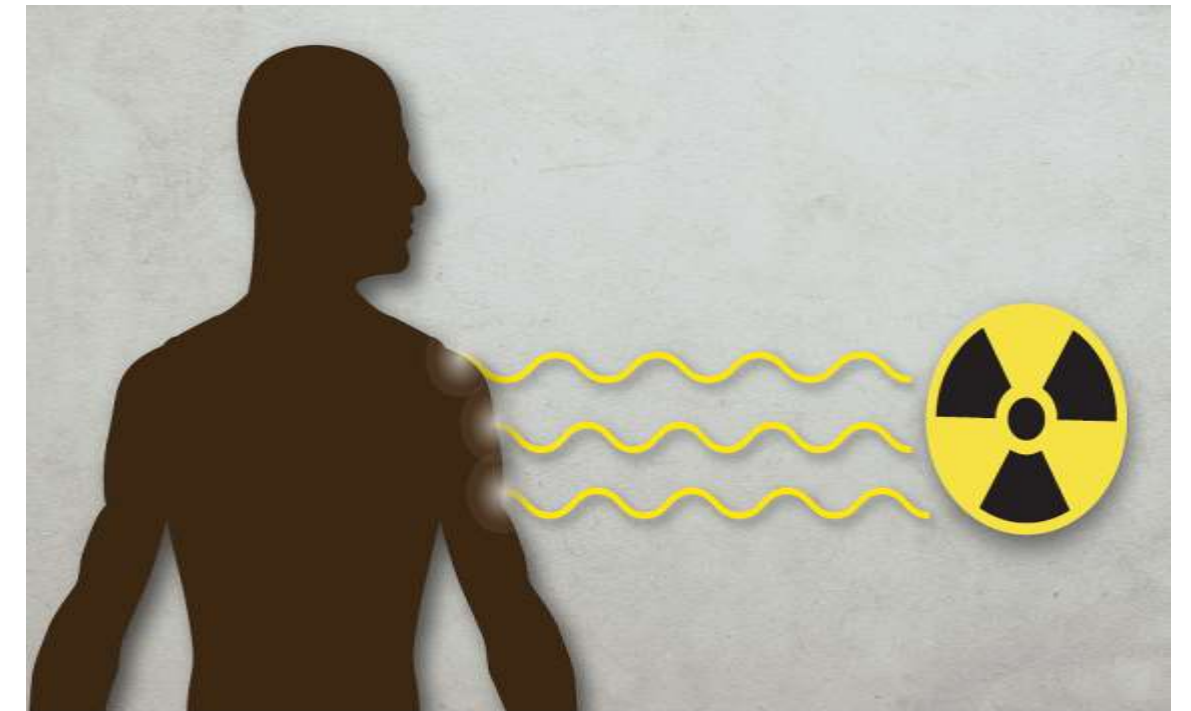




RADIATION

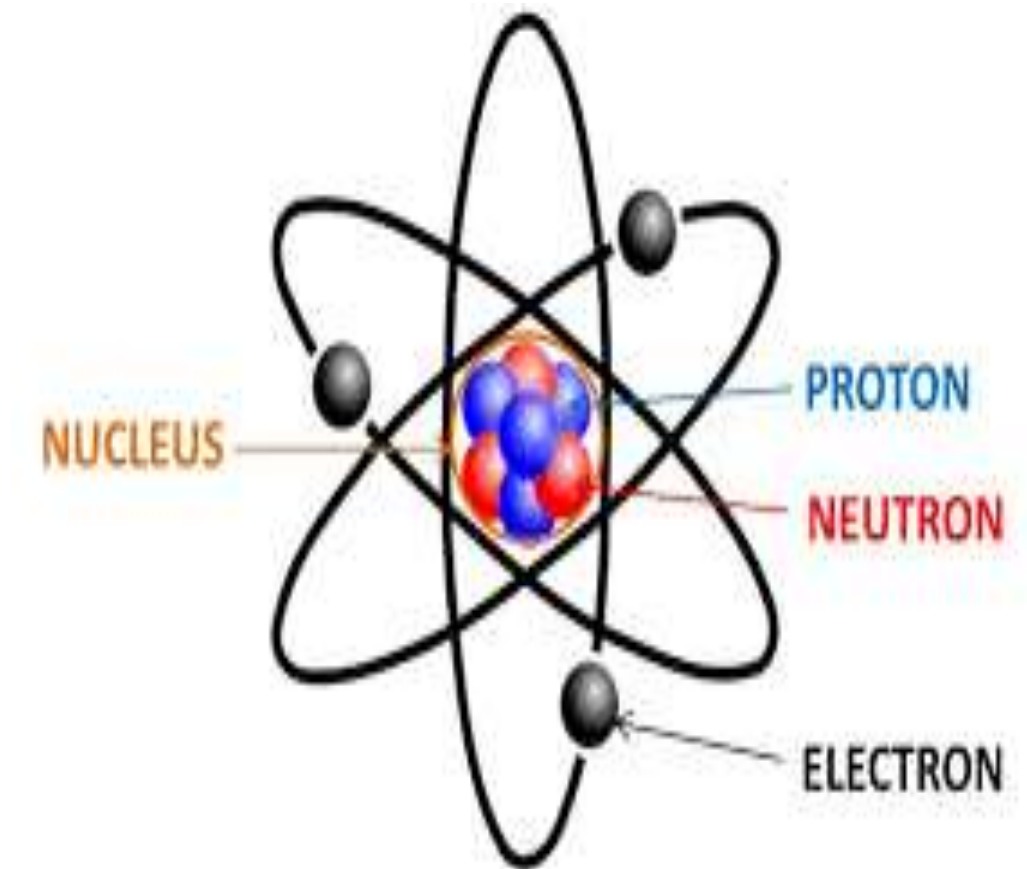


- Radiation is a small packet of energy which travels as waves or particles and transfer energy from one point to another point.
- There are two types of Radiation, Namely
 - (I) Photons (Eg: X-rays and gamma rays)
 - (II) Particles (Eg : protons, neutrons and alpha Particles)
- Radiation is a double edged weapon, analogous to fire which posses both benefits and Hazards.



AN ATOM

- Smallest and invisible particle in matter.
- All matter is composed of individual entities called elements.
- Each atom consists of a small central core, the nucleus where the most of the atomic mass is located and surrounding “cloud” of electrons moving objects around the nucleus.
- Where as the radius of an atom is approximately 10^{-10}m .
- And the Radius of the nucleus is about 10^{-15}m .





THE NUCLEUS



- Atoms are made up of a positively charged nucleus surrounded by a cloud of negatively charged electrons.
- Nuclei are very dense and extremely small.
- They contain more than 99.9% of the mass of an atom and are ten thousand times smaller than an atom.
- The nucleus is a collection of particles called protons, which are positively charged, and neutrons, which are electrically neutral.





INTERROGATIONS



1. It's true that radiation travels in medium or without medium ?!
2. Atom Consists of ?!
3. Radius of an Atom ?!
4. What is Electron ?!



REFERENCES

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2. Text Book of Radiological Safety – K. Thaylan (2010) Jaypee Brothers and medical Publishers, New Delhi.
3. Quality Control in Diagnostic Imaging J.E.Gray



THANK YOU