SNS COLLEGE OF ALLIED HEALTH SCIENCES- COIMBATORE 35

DEPARTMENT : RADIOGRAPHY AND IMAGNG TECHNOLOGY

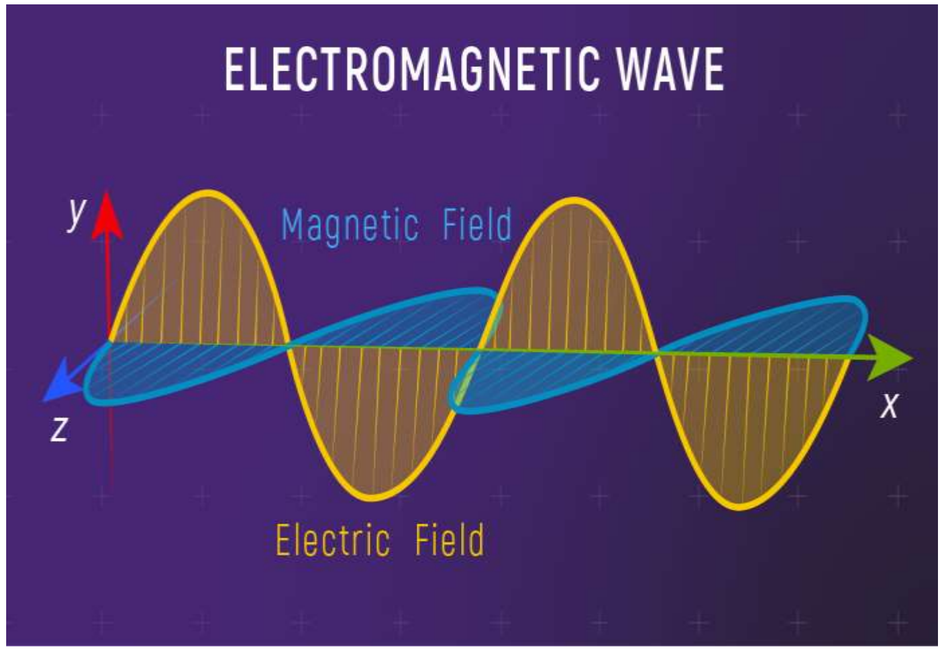
SUBJECT : GENERAL PHYSICS, RADIATION PHYSICS AND PHYSICS OF DIAGNOSTIC RADIOLOGY

PAPER : PAPER II

TOPIC : 1. ELECTROMAGNETIC WAVES
2. EINSTEIN'S FORMULA
3. NEWTON'S LAWS OF MOTION

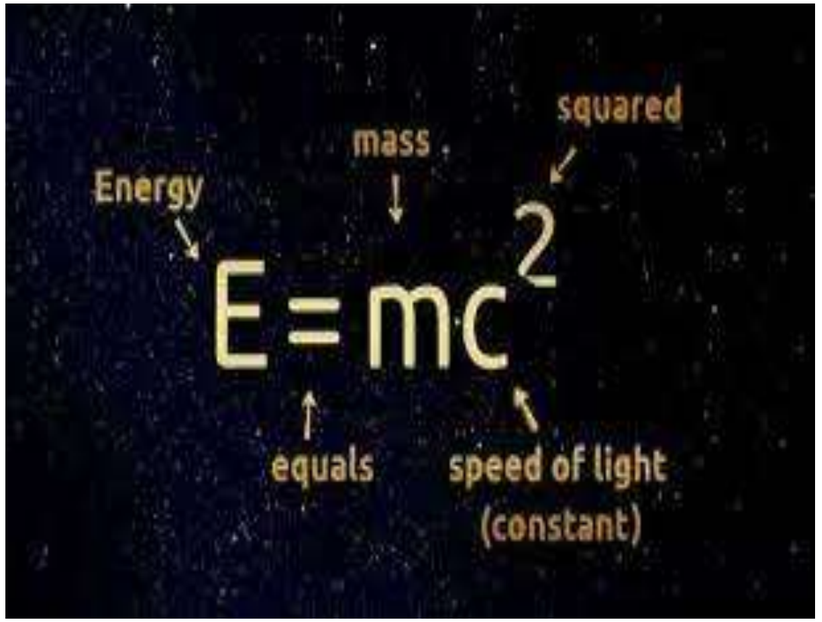
ELECTROMAGNETIC WAVES

- Electromagnetic (EM) radiation is a form of energy, such as sunlight, radio waves, microwaves, X-rays and gamma rays which contains a broad range of electromagnetic wavelengths.
- X-rays are electromagnetic radiation of exactly the same nature as light but it has a shorter wavelength.



EINSTEIN'S FORMULA

- German born physicist a Albert Einstein's theory of special relativity that expresses the fact that mass and energy are the same physical entity and can be changed into each other
- Energy and mass (matter) are interchangeable to each other. Energy equals mass times the speed of light squared.



NEWTON'S LAWS OF MOTION

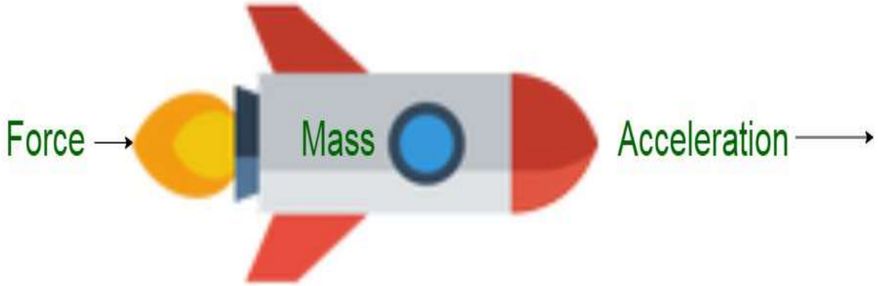
- **NEWTON'S FIRST LAW**

Newton's first law of motion states that, if a body is in the state of rest or is moving with a constant speed of straight line, then the body will remain in state of rest or keep moving in straight line, unless and until it is acted upon by an external force.

NEWTON'S LAWS OF MOTION

NEWTON'S SECOND LAW

- Newton's second law of motion states that the, rate of change of momentum of a body is directly proportional to the force applied on it.
- The momentum of a body is equivalent to the product of its mass and velocity.
- When a force applied to the body, it can either change its momentum or its velocity or both.

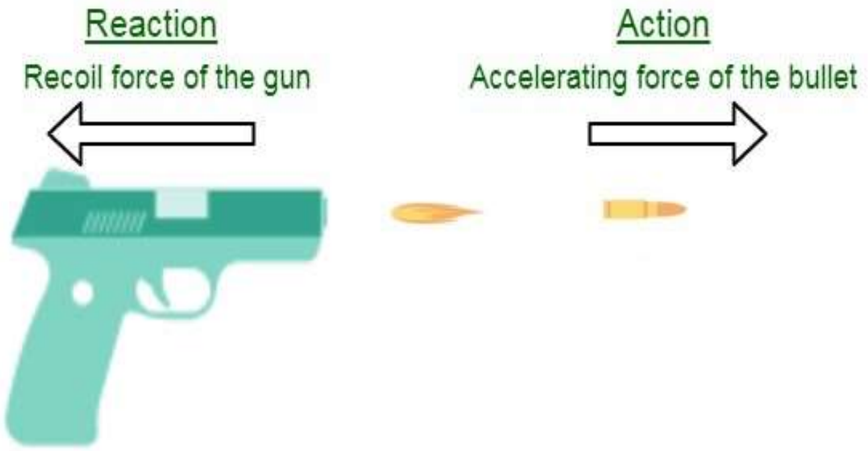


F = ma

NEWTON'S LAWS OF MOTION

NEWTON'S THIRD LAW

- According to Newton's second law of motion, to every action, there is always an equal and opposite reaction.



INTERROGATIONS

1. Define Force
2. What is work ?
3. What is power ?

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