Physics - FSC Part 1 Physics Chapter 9 Short Questions Preparation

Q1. What is difference between interference and diffraction fringes?

Ans 1: Interference Fringes: The superposition of two waves having same frequency and travelling in same direction results in bright and dark fringes is called interference fringes.

Diffraction Fringes: The fringes formed due to the bending of light around edges and corners are called diffraction fringes.

Q2. Can visible light produce interference fringes? Explain.

Ans 1: Yes visible light or what light can produce interference fringes. But each color will produce its own interference fringe pattern. Theses patterns overlap to give rise to a resultant diffused coloured interference pattern.

Q3. In Newton's rings, Why are the fringes circular?

Ans 1: The thickness of the air film between plano-convex lens and plane glass plate is almost zero at the point of contact "o" and gradually increases as we proceed towards the periphery of the lens. Thus, points where the thickness of air film is constant will lie on a circle with "o" as centre. That is why circular fringes are produced.

Q4. How would you distinguish between un-polarizedand plane polarized lights?

Ans 1: Un-Polarized lights: A beam of ordinary light consists of electric and magnetic vibrations which are perpendicular to the direction of propagation. It is called un-polarized light.

Plane Polarized lights: The beam of light in which all vibrations are confined to one plane of vibration is called plane polarized light.

Q5. Define optical rotation. Give its practical use.

Ans 1: When a plane polarized light is passed through certain crystals, they rotate the plane of polarization. It is called optical rotation.
Organic solutions such as sugar, tartaric acid etc., show optical rotation which is used to determine their concentration in the solutions.

Q6. What is diffraction of light?

Ans 1: The slight bending of light as it passes around the edge of an object is called diffraction of light.

Q7. Why the polaroid sun glasses are better than ordinary sun glasses?

Ans 1: Polaroid sun glasses are better than ordinary sun glasses because they reduce the glare of light entering into the eye as a

result of polarization.

Q8. How can the distance between interference fringes affect by the separation between the slits of young's experiment? Can fringes disappear?

Ans 1:

Q9. Write two uses of X-rays diffraction by crystals.

Ans 1: X-ray diffraction has been very useful in determining the structure of biologically important molecules such as hemoglobin and double helix structure of DNA.

Q10. Can you obtain plane polarized light from un-polarized light? If your answer is yes, write the name of two processes by which plane polarized light is obtained.

Ans 1: Yes , we can obtain plane polarized light from un-polarized light.
This can be achieved by processes such as

- Selective absorption
- Reflection from different surfaces