Physics - FSC Part 1 Physics Chapter 10 Short Questions Preparation

Q1. Define total internal reflection and continuous refraction.

Ans 1: Total Internal Reflection:When a light ray traveling from a denser medium towards a rare medium, makes an angle of incidence greater than critical angle of the medium, then the ray is totally reflected back into the same denser medium. This phenomenon is called total internal reflection.
Continuous Refraction: It is the mode of propagation of light in which light is continuously refracted inside the different graded index fibers which are used in fibre optics.

Q2.

Ans 1:

Q3. Focal length of convex lens is 5 cm, calculate its magnification.

Ans 1:

Q4. What do you understand by Linear Magnification?

Ans 1: Linear magnification is the ratio of the size of the image to the size of object.Angular magnification is the ratio of the angle subtended by the image as seen through the optical device to that subtended by the object at the naked eye placed at least distance of distinct vision.

Q5. What do you mean by "Normal adjustment " in an astronomical telescope?

Ans 1: In normal adjustment, the image formed by the objective lies at the focus of both the objective and the eye-piece and the final image appears to be formed at infinity. The distance between the objective and eye-piece of a telescope in normal adjustment is f_o+f_e which equals the length of the telescope.

Q6. A magnifying glass gives a five time enlarged image at a distance of 25 cm from the lens. What will be the focal length of the lens?

Ans 1:

Q7. Differentiate between multimode step index and multimode graded index fibre.

Ans 1:

Ans 2:

Q8. How light signals is transmitted through optical fibre?

Ans 1: The lights signal are transmitted through the optical on the principle of

- Total internal reflection
- Continuous refraction

In multimedia step index fiber, the signal is transmitted baby means of total internal reflection while in case of multimode graded index fiber, the signals transmitted by total internal reflection and continuous refraction.

Q9. What do you understand by linear magnification and angular magnification?Explain how a convex lens is used as magnifier ?

Ans 1: Linear Magnification: is the ratio of the size of the image to the size of object.
Angular Magnification: is the ratio of the angle subtended by the image as seen through the optical device to that subtended by the object at the naked eye placed at near point
A convex lens of shorter focal length can be used as a magnifier when the object is placed very close to it.i.e When it lies between the lens and its focus.The image then formed is virtual, erect and magnified.

Q10. Why would it be advantageous to use blue light with a compound microscope?

Ans 1: