Physics - FSC Part 1 Physics Chapter 10 Short Questions Preparation

Q1. 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.

Q2. What is resolving power in optical instrument? Write formula for grating.

Ans 1:

Q3. 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.

Q4. An astronomical telescope of long focal length and large aperture is considered to be a good telescope. Why?

Ans 1: Objective of long focal length and large aperture is used to collect a great amount of light from the astronomical objects.

Q5. When object lie within the principle focus of convex lens what is the nature of image and where it is formed?

Ans 1: When object lie within the principle focus of convex lens, then image will be virtual, erect and magnified and will be formed at least distance of distinct vision.

Q6. Why we use infrared light in a fiber optics communication system?

Ans 1: Infrared light travels faster through optical fiber than visible light. So, it is preferred.

Q7. 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.

Q8. Find magnifying power of a convex lens of 25 cm focal length act as a magnifying glass.

Ans 1:

Q9. Define Magnification.

Ans 1: The size of the object goes on increasing, when the object brought from a far off point to the focus of the lens. This phenomenon of enlargement is called magnification. Its is the ration of size of image to the size of object.

Q10. A telescope is made an objective of focal length 20 cm and eye-piece of 5 cm, both convex lenses. Find the magnifying power of telescope.

Ans 1: