One Two academy

Std 12 Physics Unit -6

Time: 60 minutes **Maximum marks: 35**

Choose the correct answer:- ***5 x 1 = 5***

1. For light incidents from the air on a slab of refractive index 2, the maximum possible angle of refraction is,

(a) 30^o (b) 45^o (c) 60^o (d) 90^o

2. Stars twinkle due to

(a) reflection (b) total internal reflection (c) refraction

3. An object is placed in front of a convex mirror of the focal length of *f* and the maximum and minimum distance of an object from the mirror such that the images formed are real and magnified.

(a) 2*f* and *c* (b) *c* and ∞ (c) *f* and O (d) None of these

4.For light incident from air onto a slab of refractive index 2. Maximum possible angle of refraction is, (a) 30° (b) 45° (c) 60° (d) 90°

5.The radius of curvature of curved surface at a thin planoconvex lens is 10 cm and the refractive index is 1.5. If the plane surface is silvered, then the focal length will be,

(a) 5 cm (b) 10 cm (c) 15 cm (d) 20 cm

Answer *any three* of the following questions:- **3 x 2 = 6**

6. What is the principle of reversibility?
7. What are mirage and looming ?
8. Why do clouds appear white ?
9. An object is placed at a certain distance from a convex lens of focal length 20 cm. Find the object distance is the image obtained is magnified 4 times.

Answer any three of the following questions: ***3 x 3 = 9***

10. How does a. Endoscope work?
11. A compound microscope has a magnifying power of 100 when the image is formed at infinity. The objective has a focal length of 0.5 cm and the tube length is 6.5 cm. What is the focal length of the eye piece?
12. Derive the equation between f and R for a spherical mirror.
13. How are rainbows formed ?

Answer the following questions: ***3 x 5 = 15***

14. Derive the mirror equation and the equation for lateral magnification.

OR

Obtain the equation for the radius of illumination.

15. Obtain the Lens maker's formula and give its significance.

OR

What is dispersion? Obtain the equation for the dispersive power of a medium.

16. A point object is placed at 20 cm from a thin Plano-convex lens of focal length 15 cm whose plane surface is silvered. Locate the position and nature of the final image.

OR

Describe Fizeau's method to determine the speed of light.

All the Best