

TEST SERIES(PHYSICS)**RAY AND WAVE OPTICS****MM 35****MT-11/2H**

Q1.The intensity of the light transmitted by a polaroid is half the intensity of the light incident on it. Give reason. (1)

Q2.Draw the shape of the refracted/reflected wave front when a plane wavefront incident on (i)prism (ii)convex mirror. (1)

Q3.Two objective lenses of aperture A_1 and A_2 ($A_1 > A_2$) are used in two telescope. Write the ratio of their resolving power. (1)

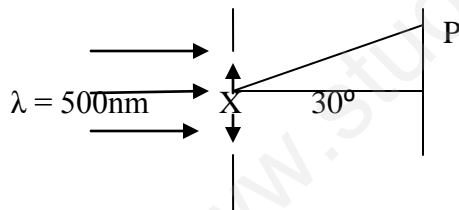
Q4. For which angle of incidence a ray suffers minimum deviation of 30° when incident on an equilateral prism. (1)

Q5.A convex lens and a concave lens of same focal length are kept in contact.find the focal length of the combination. (1)

Q6.On the basis of Huygens principle prove laws of reflection of light. (2)

Q7.In Youngs double slit experiment in I is the intensity emitted by each slit then prove that in interference pattern intensity varies between 0 and $4I$. (2)

Q8.



For which value of X first maxima will be obtained at P . (2)

Q9.If an object is placed at the bottom of a tank of depth d . Refractive index of water is μ .Find the area of the circle within which we can see the object from the surface of water. (2)

Q10.Focal length of double equi convex lens is twice of radius of curvature of its each face. Find the refractive index of lens. What would be the nature of lens if it is immersed in a liquid of refractive index 2. (2)

Q11.For concave spherical surface prove that $n_2/v - n_1/u = (n_2 - n_1)/R$. (3)

Q12.Derive the relation $1/f = 1/v - 1/u$ for a convex lens. Draw m vs v graph .Write how we can find focal length from this graph? (3)

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Q13. Derive an expression for angle of deviation for an equilateral prism. Draw a graph between angle of deviation vs angle of incidence. Write the conditions of minimum deviation. Derive a relation for refractive index of the material of prism. (3)

Q14. Draw the working of compound microscope. Derive the relation for its magnifying power. Why we use the lens of small aperture as objective in compound microscope? (3)

Q15.(A) Why we use lens of greater focal length as objective and lens of small focal length as an eyelens in compound microscope? (1)

(B) Why we use lenses of small focal lengths in compound microscope? (1)

Q16.(A) For which position of an object in front of convex lens of power +10D it will form an image which is twice in size of object. (1)

(B) Write the differences between interference and diffraction. (1)