RAY OPTICS AND OPTICAL IN

{11. The distance between the pole and centre of curvature of the m irrpr called radius of curvature

f =

(21. Mirror equation $\frac{1}{} + \frac{1}{} = \frac{1}{f}$ (Li Is Object distance, v Is Image distance and f Focal length.)

{3.1. Linear rnag.nification rri = $\frac{\text{size of image}}{\text{size of obj}}$ $\frac{\text{image distance}}{\text{Object di Aance}}$ = $\frac{v}{u}$

(4), in, case of lens Pia v u — 1 2 – 1 1

{R= Radius of curvature !A i and .14,2 are refractive indices of medium!!

{51. Relationship between LA..... and Focal length f i5 $\frac{1}{V} - \frac{1}{u} = \frac{1}{f}$ in case ien5.

(6). Longitudinal magrilflcatloil = (Lateral magnification) ^{2}

{71 Equivalent lens

{I} Lens In contact $\frac{1}{F} = \frac{1}{} + \frac{1}{f_2}$ (i i) Lens at a distance a; $\frac{1}{F}$ $\frac{1}{f}$ $\frac{1}{f_2}$ — $\frac{d}{f_1f_2}$

RI. Reciprocal of fdcal length is called p5 pourer of len$.

$-\frac{1}{\text{f(in metres)}}$ $\frac{100}{\text{qin cm)}}$

{9}. For achromatic combination of two lens $\pm + \frac{(9^2}{f2} =$

Olt Refractive index of material of prism $\mu = \frac{\sin(\frac{A+\delta_m}{2})}{\sin(\frac{A}{2})}$ (a_m) Minimum deviation angle

DC. For smell-angled prism $d = (\mu - 1)A$

{where A= Angle of prism and 6= Deviation angle)

OA_ Dispersive power of prism For two colors (blue and red}

$\omega = \frac{\mu_v - \mu_r}{\mu_d} = \frac{\mu_v - \mu_r}{\mu - 1}$.

(13). For simple microscope,.

{a) magnification $m = 1 + \frac{D}{f}$ Where D= Least distance of diAlriet vision.. and f = Focal length)

{b $M = \frac{D}{f}$ for Image to form at infinity

(14). For compound microscope_

rylagnificationigialzierthee $m = m_o = \frac{v_o}{u_o}$ and Magnification of eye piece $m_e = 1 +$

{a) m $m = m_o m_e = \frac{v_o}{u_e}\left(1 + \frac{D}{f_e}\right)$ for least distance of dIstInct vision.

$m = \frac{v_o}{u_o}\left(\frac{D}{f_e}\right)$ for image to form at infinite.

115). Magnifying power of 'telescope $m = \frac{f_o}{f_e}$ and length of telescope $L = f_o + f_e$