Wave and Motion : Answers of Typical Questions on Rest of Geometrical Optics

A-01	16 cm
A-02	3 cm
A-03	0.93 mm
A-04	15 cm
A-05	60 cm from the lens further away from the mirror
Q-06	Q-62, HCV-I, Ch-18, Ex, pp. 416
Q-06	A converging lens of focal length 12 cm and a diverging mirror of a focal length 7.5 cm are placed 5.0 cm apart with their axes coinciding. Where should an object be placed so that its image falls on itself?
A-06	30 cm from the lens further away from the mirror
A-07	1.67 cm from the lens
A-08	One at 15 cm and the other at 24 cm from the lens away from the mirror
A-09	30 cm from the lens towards the mirror
A-10	At the object itself, of the same size
A-11	30.33 cm from the lens towards the glass plate.

A-12	1.0 cm if the light is incident from the side of concave lens and 2.5 mm if it is incident from the side of the convex lens.
A-13	60 cm from the diverging lens or 210 cm from the converging lens
A-14	(a) 10 cm from the second lens further away, (b) erect and real (c) 10 mm
A-15	10 cm for convex lens and 60 cm for concave lens
A-16	(a) - (b) 5 cm from the first lens towards the second lens (c) 20 cm
A-17	$\frac{\mu R^2 gt}{\left[(\mu-1)\left(h-\frac{1}{2}gt^2\right)-R\right]^2}$
A-18	$\frac{R^2V}{(2x-R)^2}$
A-19	(a) $-\frac{R^2V}{[2(d-Vt)-R]^2}$ (b) $V\left[1-\frac{R^2}{[2(d-Vt)-R]^2}\right]$
A-20	$2\left(1+\frac{m}{M}\right)V$
A-21	1.2 cm
A-22	(a) $x=-\frac{2R}{3},\ R$ (b) $x=-2R,\ 0$ (c) $x=-3R,\ -\frac{4R}{3}$
A-23	8.57 cm

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