

Wave and Motion: Rest of Optics – Typical Questions (Only Answers)

A-1	No
A-2	15,000 km; Curvature of earth's surface.
A-3	Continuous visibility of light is undesirable.
A-4	Angular speed of toothed wheel would not be feasible with the experimental setup.
A-5	It helps to improve upon accuracy of measurement.
A-6	(a)
A-7	(a)
A-8	(b)
A-9	(a), (b), (c), (d)
A-10	(c)
A-11	(c)
A-12	$1.25 \times 10^4 \text{ deg/s}$
A-13	$2.97 \times 10^8 \text{ m/s}$
A-14	$7.8 \times 10^3 \text{ rev/s}$
A-15	Zero
A-16	True
A-17	Decrease; Depends upon the angle of incidence and direction of rotation
A-18	Just below the lamp; Increase
A-19	Morning and evening $\theta \rightarrow 90^\circ$, while at noon the angle $\theta \rightarrow 0^\circ$.
A-20	Filament lamp works on principle of incandescence, mercury vapour lamp works on the principle of excitation and relaxation of molecules of mercury vapour.
A-21	No
A-22	(d)
A-23	(c)
A-24	(c)
A-25	(b)

A-26	(c)
A-27	(a)
A-28	(c)
A-29	(b)
A-30	(c)
A-31	(c)
A-32	(d)
A-33	(c), (d)
A-34	(a), (b), (c), (d)
A-35	(b), (c)
A-36	(b), (c), (d)
A-37	3 W
A-38	10 s
A-39	(a) 0.24 (b) 0.80 (c) 0.78 (d) 0.41
A-40	200 W
A-41	66%
A-42	(a) 70 W (b) 39730 lumen (c) 568 lumen./W
A-43	240 lumen/W
A-44	150 cd
A-45	40 lux
A-46	20 cm
A-47	3.24 lux
A-48	It will not change
A-49	$\frac{R}{\sqrt{2}}$
A-50	10 lux
A-51	24 cm
A-52	80 cm
A-53	(d)
A-54	(a)
A-55	(b)