Wave and Motion: Optical Instruments – Answers to Typical Questions

A-1	No
A-2	No
A-3	No
A-4	Chromatic aberration
A-5	Both of them create images at near distance, but their focal length make difference by fulfilling their purpose
A-6	Yes
A-7	Object lens does not act as simple microscope, and hence it is not a case of cascaded two simple microscopes.
A-8	No
A-9	Yes, Yes
A-10	-
A-11	No, 55 cm, Yes if focal length of diverging lens is nearly 9.4 cm.
A-12	(c)
A-13	(d)
A-14	(a)
A-15	(d)
A-16	(d)
A-17	(d)
A-18	(b)
A-19	(a)
A-20	(d)
A-21	(c)
A-22	(b)
A-23	(a)
A-24	(a), (d)

A-25	(a), (d)
A-26	(a)
A-27	(a), (c)
A-28	(b), (d)
A-29	A, B, D and C
A-30	8.1 cm farther from the simple microscope
A-31	(a) 12.5 cm (b) 2.0
A-32	2
A-33	8X
A-34	8.4
A-35	20 to 30
A-36	0.04 mm
A-37	2 cm
A-38	5 cm
A-39	Microscope, 33
A-40	1 D, 50 D
A-41	90 cm, 9
A-42	3 cm
A-43	3 D
A-44	-0.5 D
A-45	Nearsighted, 40 cm
A-46	+4.5 D
A-47	50 D, 54 D
A-48	+60 D to + 51 D

A-49	-4.2 D
A-50	+4 D, +4.56 D
A-51	(a) 6 D, (b) 9 D , (c) Yes
A-52	(a) Right lens, (b) 2
A-53	No, No
A-54	No
A-55	Yes
A-56	Wrong
A-57	Yes, No
A-58	-
A-59	(a)
A-60	(b)
A-61	(b)
A-62	(d)
A-63	(c)
A-64	(b), (c)
A-65	(a), (b), (c)

A-66	(d)
A-67	(a), (b), (c)
A-68	(b), (d)
A-69	7^0
A-70	(a) 0.2 (b) 0.72^0
A-71	0.04
A-72	0.027
A-73	7.0^0
A-74	0.02
A-75	10^0
A-76	(a) $\frac{2(\mu_v-\mu_r)}{\mu'_v-\mu'_r}$ (b) $\frac{2(\mu_y-1)}{\mu'_y-1}$
A-77	0.15^0
A-78	(a) 5^0 (b) 0.03^0 (c) 6^0 (d) 0.45^0
A-79	(a) 0.0146^0 (b) 0.163^0
A-80	6.06 m

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