

JEE MAIN RAY OPTICS AND OPTICAL INSTRUMENTS — SIMPLE AND COMPOUND MICROSCOPE — PYQS

Max. Marks: 12

Questions: 3

Section A (MCQ) — 2 questions

Q.1 A compound microscope is designed with two symmetric biconvex lenses. The objective lens is cut vertically, creating two identical plano-convex lenses. One of them is used in place of original objective lens. To retain same magnification keeping the object distance unchanged, the tube length has to be

[JEE Main 2026 (Online) 5th April Morning Shift]

- (1) increased two times (2) increased $\frac{3}{2}$ times
- (3) decreased two times (4) decreased $\frac{3}{2}$ times

Scan or tap for the full solution



Q-2 In a microscope of tube length 10 cm two convex lenses are arranged with focal lengths of 2 cm and 5 cm. Total magnification obtained with this system for normal adjustment is $(5)^k$. The value of k is _____.

[JEE Main 2026 (Online) 24th January Morning Shift]

- (1) 4 (2) 5 (3) 2 (4) 3.5

Scan or tap for the full solution



Section B (Numerical) — 1 question

Q.3 In a microscope the objective is having focal length $f_o = 2$ cm and eye-piece is having focal length $f_e = 4$ cm. The tube length is 32 cm. The magnification produced by this microscope for normal adjustment is _____.

[JEE Main 2026 (Online) 21st January Morning Shift]

Scan or tap for the full solution



ANSWER KEY

Section A (MCQ) — 2 questions

Ques.	1	2								
Ans.	1	3								

Section B (Numerical) — 1 question

Ques.	3						
Ans.	100						