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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

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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

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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]

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ANSWER KEY

Section A (MCQ) — 2 questions

Ques.	1	2									
Ans.	**1**	**3**									

Section B (Numerical) — 1 question

Ques.	3						
Ans.	**100**						