

JEE MAIN COMPLEX NUMBERS AND QUADRATIC EQUATIONS — MODULUS AND CONJUGATE OF A COMPLEX NUMBER — PYQS

Max. Marks: 16

Questions: 4

Section A (MCQ) — 3 questions

- Q.1** Let the set of all values of $k \in \mathbb{R}$ such that the equation $z(\bar{z} + 2 + i) + k(2 + 3i) = 0$, $z \in \mathbb{C}$, has at least one solution, be the interval $[\alpha, \beta]$. Then $9(\alpha + \beta)$ is equal to :

[JEE Main 2026 (Online) 6th April Morning Shift]

- (1) -10 (2) -8
 (3) $10\sqrt{13}$ (4) $8\sqrt{13}$

Scan or tap for the
full solution



- Q.2** Let $S = \{z \in \mathbb{C} : 4z^2 + \bar{z} = 0\}$. Then $\sum_{z \in S} |z|^2$ is equal

to: [JEE Main 2026 (Online) 22nd January Evening Shift]

- (1) $\frac{5}{64}$ (2) $\frac{1}{16}$ (3) $\frac{7}{64}$ (4) $\frac{3}{16}$

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full solution



- Q.3** Let z be a complex number such that $|z| = 1$. If $\frac{2 + k^2 z}{k + \bar{z}} = kz$, $k \in \mathbb{R}$, then the maximum distance of $k + ik^2$ from the circle $|z - (1 + 2i)| = 1$ is :

[JEE Main 2025 (Online) 2nd April Morning Shift]

- (1) $\sqrt{5} + 1$ (2) 3
 (3) $\sqrt{3} + 1$ (4) 2

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Section B (Numerical) — 1 question

- Q.4** Let $z = (1 + i)(1 + 2i)(1 + 3i) \dots (1 + ni)$, where $i = \sqrt{-1}$. If $|z|^2 = 44200$, then n is equal to _____.

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

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ANSWER KEY

Section A (MCQ) — 3 questions

Ques.	1	2	3								
Ans.	1	4	1								

Section B (Numerical) — 1 question

Ques.	4										
Ans.	5										