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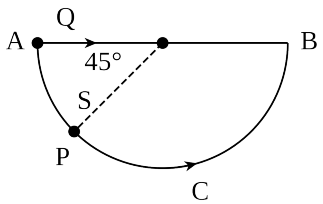
JEE MAIN WORK, ENERGY AND POWER — CONSERVATION OF MECHANICAL ENERGY — PYQS

Max. Marks: 8 **Questions:** 2

Section A (MCQ) — 2 questions

Q.1 A bead P sliding on a frictionless semi-circular string (ACB) and it is at point S at t = 0 and at this instant the horizontal component of its velocity is v. Another bead Q of the same mass as P is ejected from point A at t = 0 along the horizontal string AB, with the speed v, friction between the beads and the respective strings may be neglected in both cases. Let t_P and t_Q be the respective times taken by beads P and Q to reach the point B, then the relation between t_P and t_Q is

[JEE Main 2026 (Online) 23rd January Evening Shift]



(1) $t_P < t_Q$ (2) $t_P = t_Q$

(3) $t_P > 1.25t_Q$ (4) $t_P > t_Q$

Scan or tap for the full solution

Q.2 A particle is released from height S above the surface of the earth. At certain height its kinetic energy is three times its potential energy. The height from the surface of the earth and the speed of the particle at that instant are respectively.

[JEE Main 2025 (Online) 3rd April Morning Shift]

(1) $\frac{S}{4}, \frac{3gS}{2}$ (2) $\frac{S}{2}, \frac{3gS}{2}$

(3) $\frac{S}{4}, \sqrt{\frac{3gS}{2}}$ (4) $\frac{S}{2}, \sqrt{\frac{3gS}{2}}$

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ANSWER KEY

Ques.	1	2									
Ans.	1	3									