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JEE MAIN LAWS OF MOTION — EQUILIBRIUM OF CONCURRENT FORCES — PYQS

Max. Marks: 12 **Questions:** 3

Section A (MCQ) — 3 questions

Q.1 A flexible chain of mass m hangs between two fixed points at the same level. The inclination of the chain with the horizontal at the two points of support is 30°. Considering the equilibrium of each half of the chain, the tension of the chain at the lowest point is _____.

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

(1) mg (2) $\frac{\sqrt{3}}{2}$mg

(3) $\frac{1}{2}$mg (4) $\sqrt{3}$mg

Scan or tap for the full solution

Q.2 A body of mass m is suspended by two strings making angles θ_1 and θ_2 with the horizontal ceiling with tensions T_1 and T_2 simultaneously. T_1 and T_2 are related by $T_1 = \sqrt{3}T_2$, the angles θ_1 and θ_2 are

[JEE Main 2025 (Online) 4th April Morning Shift]

(1) $\theta_1 = 30°$, $\theta_2 = 60°$ with $T_2 = \frac{3mg}{4}$

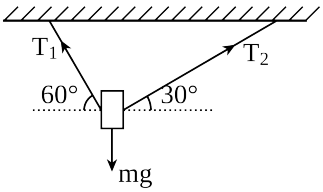
(2) $\theta_1 = 45°$, $\theta_2 = 45°$ with $T_2 = \frac{3mg}{4}$

(3) $\theta_1 = 30°$, $\theta_2 = 60°$ with $T_2 = \frac{4mg}{5}$

(4) $\theta_1 = 60°$, $\theta_2 = 30°$ with $T_2 = \frac{mg}{2}$

Scan or tap for the full solution

Q.3



A body of mass 1 kg is suspended with the help of two strings making angles as shown in figure. Magnitudes of tensions T_1 and T_2, respectively, are (in N) :
(Take acceleration due to gravity 10 m/s^2)

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

(1) $5\sqrt{3}, 5$ (2) $5\sqrt{3}, 5\sqrt{3}$

(3) 5, 5 (4) $5, 5\sqrt{3}$

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ANSWER KEY

Ques.	1	2	3								
Ans.	2	4	1								