

JEE MAIN OSCILLATIONS — SIMPLE PENDULUM — PYQS

Max. Marks: 16
Questions: 4

Section A (MCQ) — 4 questions

- Q.1** A simple pendulum of string length 30 cm performs 20 oscillations in 10 s. The length of the string required for the pendulum to perform 40 oscillations in the same time duration is _____ cm. [Assume that the mass of the pendulum remains same.]

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

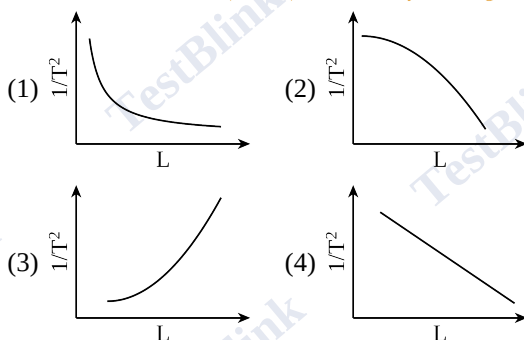
- (1) 0.75 (2) 7.5 (3) 15 (4) 120

Scan or tap for the full solution



- Q.2** Using a simple pendulum experiment g is determined by measuring its time period T . Which of the following plots represent the correct relation between the pendulum length L and time period T ?

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



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- Q.3** Two simple pendulums having lengths l_1 and l_2 with negligible string mass undergo angular displacements θ_1 and θ_2 , from their mean positions, respectively. If the angular accelerations of both pendulums are same, then which expression is correct? [JEE Main 2025 (Online) 4th April Morning Shift]

- (1) $\theta_1 l_2 = \theta_2 l_1$ (2) $\theta_1 l_1 = \theta_2 l_2$
 (3) $\theta_1 l_2^2 = \theta_2 l_1^2$ (4) $\theta_1 l_1^2 = \theta_2 l_2^2$

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- Q.4** Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A): Time period of a simple pendulum is longer at the top of a mountain than that at the base of the mountain.

Reason (R): Time period of a simple pendulum decreases with increasing value of acceleration due

to gravity and vice-versa.

In the light of the above statements, choose the most appropriate answer from the options given below :

[JEE Main 2025 (Online) 29th January Morning Shift]

- (1) Both (A) and (R) are true but (R) is not the correct explanation of (A).
 (2) (A) is true but (R) is false.
 (3) Both (A) and (R) are true and (R) is the correct explanation of (A).
 (4) (A) is false but (R) is true.

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ANSWER KEY

Ques.	1	2	3	4										
Ans.	2	1	1	3										