

PART 1 - PHYSICS

Topic : Gravitation

SECTION-1 : (Maximum Marks : 3)

- This section contains **ONE** question.
- Each question has **FOUR** options (A), (B), (C) and (D). **ONLY ONE** of these four options is the correct answer.
- For each question, choose the option corresponding to the correct answer.
- Answer to each question will be evaluated according to the following marking scheme :
 Full Marks : +3 If **ONLY** the correct option is chosen;
 Zero Marks : 0 If none of the options is chosen (i.e. the question is unanswered);
 Negative Marks : -1 In all other cases.

1. A particle of mass m , and angular momentum ℓ is moving in a circular orbit of radius r_0 under the influence of an attractive force $\vec{F}(r) = -\frac{k}{r^2}\hat{r}$. Keeping its angular momentum unchanged, the particle is displaced radially by a small distance $\delta r \ll r_0$, due to which its radial distance varies periodically. The corresponding time period is:

[JEE Advanced 2026 Paper 2]

- (A) $\frac{2\pi\ell^3}{mk^2}$ (B) $2\pi\sqrt{\frac{m}{k}}$ (C) $\frac{2\pi\ell^3}{3mk^2}$ (D) $\frac{2\pi\ell^3}{5mk^2}$

Scan or tap for the full solution



Space for Rough Work

JEE ADVANCED GRAVITATION — GRAVITATIONAL FIELD
AND POTENTIAL — PYQS

Test Pattern : JEE (Advanced)

ANSWER KEY

SECTION-1																											
Ques.	1																										
Ans.	A																										