

PhysicsByAaryan

CSIR NET . GATE . JEST . BARC - Physics

Pseudo Forces - CSIR NET Physics PYQs

Classical Mechanics . All PYQs (2015-2025) with answer key

2 questions . Answer key included

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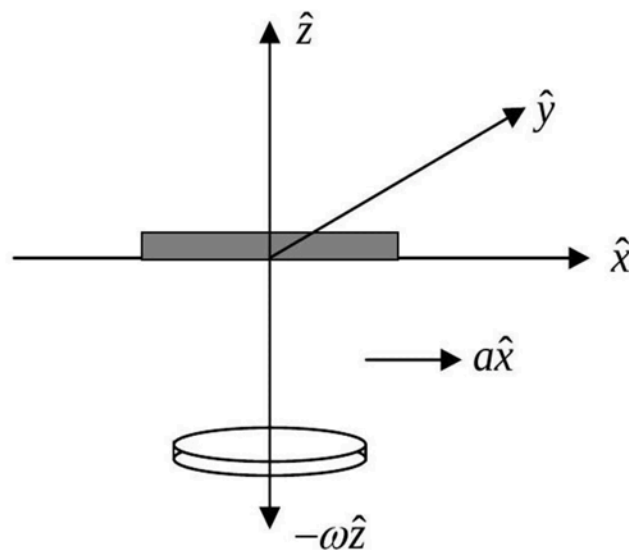
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Q1. [Dec 2017] . 3.5 marks

Classical Mechanics > Pseudo Forces

CSIR NET	2017 Dec	3.5M
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A disc of mass m is free to rotate in a plane parallel to the xy plane with an angular velocity $-\omega\hat{z}$ about a massless rigid rod suspended from the roof of a stationary car (as shown in the figure below). The rod is free to orient itself along any direction.



The car accelerates in the positive x -direction with an acceleration $a > 0$. Which of the following statements is true for the coordinates of the centre of mass of the disc in the reference frame of the car?

1. only the x and the z coordinates change
2. only the y and the z coordinates change
3. only the x and the y coordinates change
4. all the three coordinates change

Q2. [June 2019] . 3.5 marks

Classical Mechanics > Pseudo Forces

CSIR NET	2019 June	3.5M
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A turn-table is rotating with a constant angular velocity ω_0 . In the rotating frame fixed to the turntable, a particle moves radially outwards at a constant speed v_0 . The acceleration of the particle in the $r\theta$ coordinates, as seen from an inertial frame, the origin of which is at the centre of the turntable, is

1. $-r\omega_0^2\hat{r}$
2. $2r\omega_0^2\hat{r} + v_0\omega_0\hat{\theta}$
3. $r\omega_0^2\hat{r} + 2v_0\omega_0\hat{\theta}$
4. $-r\omega_0^2\hat{r} + 2v_0\omega_0\hat{\theta}$

Answer Key

2 questions . Subject and topic for quick revision

Q. No	Subject	Topic	Answer
Q1	Classical Mechanics	Pseudo Forces	4
Q2	Classical Mechanics	Pseudo Forces	4

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