

PART 1 - PHYSICS

Topic : Motion in a plane

SECTION-A : (Maximum Marks : 4)

This section contains **ONE** question.

Each question has **FOUR** options (A), (B), (C) and (D). **ONE OR MORE THAN ONE** of these four option(s) is(are) correct answer(s).

For each question, choose the option(s) corresponding to (all) the correct answer(s).

Answer to each question will be evaluated according to the following marking scheme :

Full Marks : +4 ONLY if (all) the correct option(s) is(are) chosen;

Partial Marks : +3 If all the four options are correct but ONLY three options are chosen;

Partial Marks : +2 If three or more options are correct but ONLY two options are chosen, both of which are correct;

Partial Marks : +1 If two or more options are correct but ONLY one option is chosen and it is a correct option;

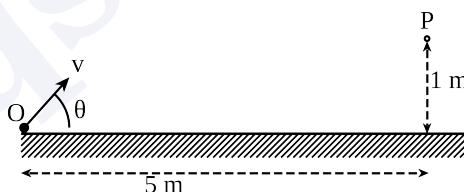
Zero Marks : 0 If none of the options is chosen (i.e. the question is unanswered);

Negative Marks : -1 In all other cases.

For example, in a question, if (A), (B) and (D) are the ONLY three options corresponding to correct answers, then choosing ONLY (A), (B) and (D) will get +4 marks; choosing ONLY (A) and (B) will get +2 marks; choosing ONLY (A) and (D) will get +2 marks; choosing ONLY (B) and (D) will get +2 marks; choosing ONLY (A) will get +1 mark; choosing ONLY (B) will get +1 mark; choosing ONLY (D) will get +1 mark; choosing no option (i.e. the question is unanswered) will get 0 marks; and choosing any other combination of options will get -1 marks.

1. A particle is thrown with a speed v from a point O at an angle θ with the horizontal plane such that it passes through the point P at a height of 1 m and horizontal distance of 5 m from O, as shown in the figure. If acceleration due to gravity is $g \text{ ms}^{-2}$, then the correct statement(s) is/are:

[JEE Advanced 2026 Paper 1]



(A) If $\theta = 45^\circ$, then $v = \frac{5\sqrt{g}}{2} \text{ ms}^{-1}$.

(B) If $\theta = 45^\circ$, the particle reaches its maximum height before it reaches P.

(C) If $\theta = 30^\circ$, the particle reaches its maximum height after reaching P.

(D) If $\theta = \tan^{-1}\left(\frac{1}{5}\right)$, then $v = 125\sqrt{g} \text{ ms}^{-1}$.

Scan or tap for the
full solution



Space for Rough Work

SECTION-B : (Maximum Marks : 4)

This section contains **ONE** question.

The answer to each question is a **NON-NEGATIVE INTEGER**.

For each question, enter the correct integer corresponding to the answer in the place designated to enter the answer.

Answer to each question will be evaluated according to the following marking scheme :

Full Marks : +4 If **ONLY** the correct answer is entered;

Zero Marks : 0 In all other cases.

2. A ball is thrown from the location $(x_0, y_0) = (0, 0)$ of a horizontal playground with an initial speed v_0 at an angle θ_0 from the $+x$ -direction. The ball is to be hit by a stone, which is thrown at the same time from the location $(x_1, y_1) = (L, 0)$. The stone is thrown at an angle $(180 - \theta_1)$ from the $+x$ -direction with a suitable initial speed. For a fixed v_0 , when $(\theta_0, \theta_1) = (45^\circ, 45^\circ)$, the stone hits the ball after time T_1 , and when $(\theta_0, \theta_1) = (60^\circ, 30^\circ)$, it hits the ball after time T_2 . In such a case, $(T_1/T_2)^2$ is _____. [JEE Advanced 2024 Paper 2]

Scan or tap for the full solution



Space for Rough Work

JEE ADVANCED MOTION IN A PLANE — PYQS

Test Pattern : JEE (Advanced)

ANSWER KEY

SECTION-A																									
Ques.	1																								
Ans.	A, B																								
SECTION-B																									
Ques.	2																								
Ans.	2																								