

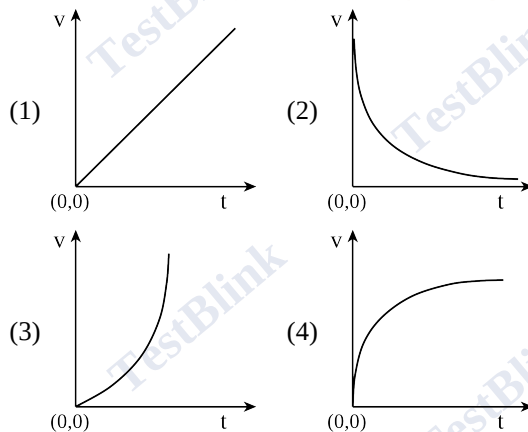
JEE MAIN MOTION IN A STRAIGHT LINE — NON-UNIFORM ACCELERATION (CALCULUS BASED) — PYQS

Max. Marks: 12
Questions: 3

Section A (MCQ) — 3 questions

- Q.1** A particle of mass m falls from rest through a resistive medium having resistive force, $F = -kv$, where v is the velocity of the particle and k is a constant. Which of the following graphs represents velocity (v) versus time (t) ?

[JEE Main 2026 (Online) 28th January Morning Shift]



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- Q.2** A particle starts moving from time $t = 0$ and its coordinate is given as $x(t) = 4t^3 - 3t$
- The particle returns to its original position (origin) 0.866 units later
 - The particle is 1 unit away from origin at its turning point
 - Acceleration of the particle is non-negative
 - The particle is 0.5 units away from origin at its turning point
 - Particle never turns back as acceleration is non-negative
- Choose the **correct** answer from the options given below :

[JEE Main 2026 (Online) 28th January Evening Shift]

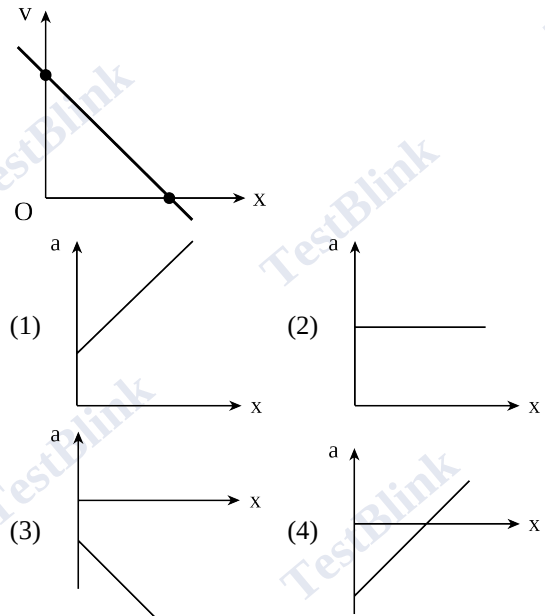
- (1) A, C, D Only (2) A, B, C Only
(3) C, E Only (4) A, C Only

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- Q.3** The velocity (v) – distance (x) graph is shown in figure. Which graph represents acceleration (a) versus distance (x) variation of this system?

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



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ANSWER KEY

Ques.	1	2	3								
Ans.	4	2	4								