

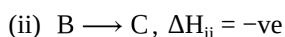
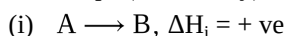
JEE MAIN CHEMICAL KINETICS — REACTION MECHANISM, TRANSITION STATE, INTERMEDIATE AND ENERGY PROFILE DIAGRAM — PYQS

Max. Marks: 16

Questions: 4

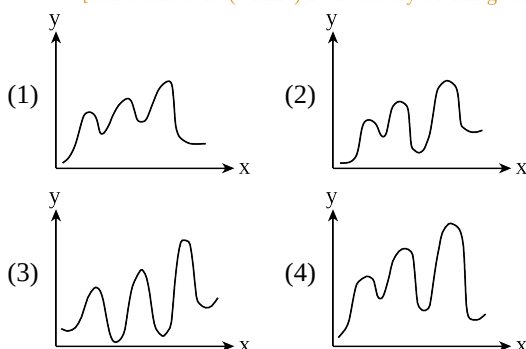
Section A (MCQ) — 4 questions

Q.1 $A \longrightarrow D$ is an endothermic reaction occurring in three steps (elementary).



Which of the following graphs between potential energy (y-axis) vs reaction coordinate (x-axis) correctly represents the reaction profile of $A \longrightarrow D$?

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



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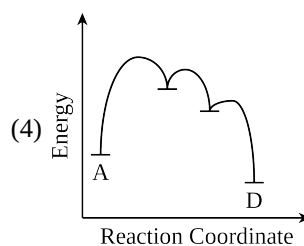
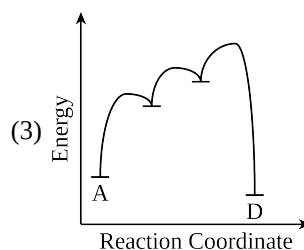
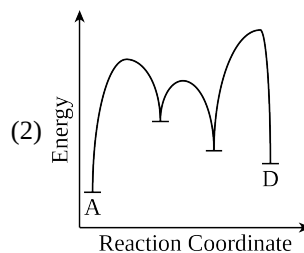
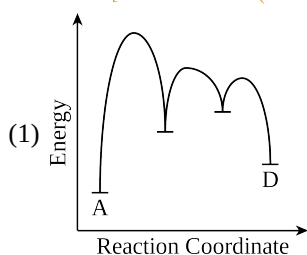


Q.2 Reactant A converts to product D through the given mechanism (with the net evolution of heat):



Which of the following represents the above reaction mechanism?

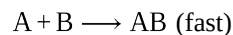
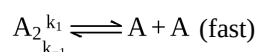
[JEE Main 2025 (Online) 2nd April Evening Shift]



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Q.3 The reaction $A_2 + B_2 \longrightarrow 2AB$ follows the mechanism:



The overall order of the reaction is:

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

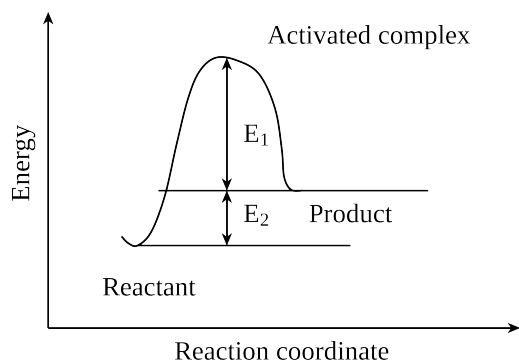
- (1) 3 (2) 2.5 (3) 1.5 (4) 2

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Q.4 Consider the given figure and choose the correct option :

[JEE Main 2025 (Online) 22nd January Evening Shift]



- (1) Activation energy of both forward and backward reaction is $E_1 + E_2$ and reactant is more stable than product.
- (2) Activation energy of forward reaction is $E_1 + E_2$ and product is more stable than reactant.
- (3) Activation energy of backward reaction is E_1 and product is more stable than reactant.
- (4) Activation energy of forward reaction is $E_1 + E_2$ and product is less stable than reactant.

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full solution



ANSWER KEY

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