

PART 1 - PHYSICS

Topic : Thermal properties of matter

SECTION-B : (Maximum Marks : 4)

This section contains **ONE** question.

The answer to each question is a **NUMERICAL VALUE**.

For each question, enter the correct numerical value of the answer (in decimal notation, truncated / rounded-off to the **SECOND DECIMAL PLACE**; e.g. 6.25, 7.00, -0.33, -0.30, 30.27, -127.30) in the place designated to enter the answer.

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

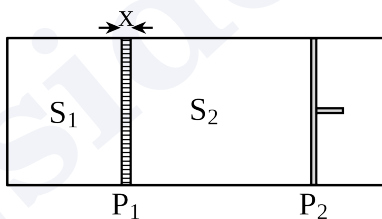
Full Marks : +4 If **ONLY** the correct answer is entered;

Zero Marks : 0 In all other cases.

1. As shown in the figure, an insulated container is fitted with a thermally conducting but immovable partition (P_1) and a freely movable but thermally insulated piston (P_2). The partition P_1 with thermal conductivity K , cross sectional area A and width x divides the container into two sections, S_1 and S_2 , each containing one mole of a monoatomic gas. The piston P_2 moves freely such that the gas in S_2 is always at the atmospheric pressure. Initially, the difference between the temperatures of S_1 and S_2 is ΔT_0 . The time it takes for the temperature difference to become $\frac{\Delta T_0}{2}$ is $\frac{nxR}{KA}$, where R is the universal gas constant. The value of n is:

[Given: $\ln 2 \approx 0.7$]

[JEE Advanced 2026 Paper 1]



Scan or tap for the full solution



Space for Rough Work

**JEE ADVANCED THERMAL PROPERTIES OF MATTER
— HEAT TRANSFER: CONDUCTION — PYQS**

Test Pattern : JEE (Advanced)

ANSWER KEY**SECTION-B**

Ques.	1									
Ans.	0.63 to 0.70									