

JEE MAIN THERMAL PROPERTIES OF MATTER — IDEAL-GAS EQUATION AND ABSOLUTE TEMPERATURE — PYQS

Max. Marks: 12

Questions: 3

Section A (MCQ) — 2 questions

- Q.1** An air bubble of volume 2.9 cm^3 rises from the bottom of a swimming pool of 5 m deep. At the bottom of the pool water temperature is 17°C . The volume of the bubble when it reaches the surface, where the water temperature is 27°C , is _____ cm^3 .
($g = 10 \text{ m/s}^2$, density of water = 10^3 kg/m^3 , and 1 atm pressure is 10^5 Pa)

[JEE Main 2026 (Online) 23rd January Evening Shift]

- (1) 2.0 (2) 4.2 (3) 3.0 (4) 4.5

Scan or tap for the
full solution



- Q.2** Pressure of an ideal gas, contained in a closed vessel, is increased by 0.4% when heated by 1°C . Its initial temperature must be:

[JEE Main 2025 (Online) 3rd April Evening Shift]

- (1) 2500 K (2) 25°C (3) 250°C (4) 250 K

Scan or tap for the
full solution



Section B (Numerical) — 1 question

- Q.3** A gas of certain mass filled in a closed cylinder at a pressure of 3.23 kPa has temperature 50°C . The gas is now heated to double its temperature. The modified pressure is _____ Pa.

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

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full solution



ANSWER KEY

Section A (MCQ) — 2 questions

Ques.	1	2								
Ans.	4	4								

Section B (Numerical) — 1 question

Ques.	3		
Ans.	3730 or 6460		