JEE Main PYQs on Thermal Expansion: JEE Main Questions for Practice with Solutions

Shivam Yadav
Updated 3+ months ago

The JEE Main 2026 exam requires a perfect balance of speed, accuracy, and a solid understanding of the key concepts in Thermal Expansion. This article provides a set of Multiple Choice Questions (MCQs) on Thermal Expansion, designed to help you master the topic, enhance your problem-solving skills, and build conceptual clarity. These skills are crucial for excelling in the JEE Main 2026 exam.

Whether you're revisiting fundamental concepts, practicing advanced problems, or testing your knowledge, these JEE Main PYQs will serve as a valuable resource to boost your preparation and confidence.

With the JEE Main 2026 exam approaching, practicing these PYQs and reviewing detailed solutions will help you tackle the exam with confidence, improving your chances of securing a high rank. Make sure you stay ahead in your JEE Main 2026 preparation with these focused and structured questions.

Also Read
- JEE Main Syllabus
- JEE Main Exam Pattern
- JEE Main Question Paper

JEE Main PYQs on Thermal Expansion

1. **On a temperature scale X, the boiling point of water is 65° X and the freezing point is 15° X. Assume that the X scale is linear. The equivalent temperature corresponding to 95° X on the Fahrenheit scale would be:**

A 63° F

B 148° F

C 48° F

D 112° F

View Solution

2. A compressive force, F is applied at the two ends of a long thin steel rod. It is heated, simultaneously, such that its temperature increases by ΔT. The net change in its length is zero. Let L be the length of the rod, A is its area of cross-section. Y is Young's modulus, and α is its coefficient of linear expansion. Then, F is equal to

A (A) $\mathrm{L^2YaΔT}$

B (B) $\frac{\mathrm{AY}}{\mathrm{aΔT}}$

C (C) $\mathrm{AYaΔT}$

D (D) $\mathrm{LAYaΔT}$

View Solution

3. At what temperature a gold ring of diameter 6.230 cm be heated so that it can be fitted on a wooden bangle of diameter 6.241 cm? Both the diameters have been measured at room temperature (27°C). (Given: coefficient of linear thermal expansion of gold $\alpha_L = 1.4 \times 10^{-5}\ K^{-1}$)

A 125.7°C

B 91.7°C

C 425.7°C

D 152.7°C

View Solution

4. **Consider a rectangular sheet of solid material of length $\ell = 9$ cm and width $d = 4$ cm. The coefficient of linear expansion is $\alpha = 3.1 \times 10^{-5}$ K^{-1} at room temperature and one atmospheric pressure. The mass of the sheet is $m = 0.1$ kg and the specific heat capacity $C_v = 900$ J $kg^{-1}K^{-1}$. If the amount of heat supplied to the material is 8.1×10^2 J, then the change in area of the rectangular sheet is:**

A $2.0 \times 10^{-6}\ \mathrm{m}^2$

B $3.0 \times 10^{-7}\ \mathrm{m}^2$

C $6.0 \times 10^{-7}\ \mathrm{m}^2$

D $4.0 \times 10^{-7}\ \mathrm{m}^2$

View Solution

5. Each side of a box made of metal sheet in cubic shape is 'a' at room temperature 'T', the coefficient of linear expansion of the metal sheet is ' α'. The metal sheet is heated uniformly, by a small temperature ΔT, so that its new temperature is $T + \Delta T$. Calculate the increase in the volume of the metal box.

A $3a^3\alpha\Delta T$

B $4a^3\alpha\Delta T$

C $4\pi a^3\alpha\Delta T$

D $\frac{4}{3}\pi a^3\alpha\Delta T$

View Solution

JEE Main PYQ

You can also check

JEE Main Overview
JEE Main Question Paper
JEE Main Cutoff
JEE Main Registration
JEE Main Exam Pattern
JEE Main Preparation
JEE Main Mock Test
JEE Main Result
JEE Main College Predictor
JEE Main News
JEE Main Q&A
JEE Main Participating Colleges

View More JEE Main Questions

5 shares

SHARE ON FACEBOOK

SHARE ON TWITTER

Fees Structure

Structure based on different categories

Categories	State
General	1000
Women	800
sc	500
pwd	500
Others	900

Note: The application fee for choosing exam centers in India and countries other than India varies.

In case of any inaccuracy, Notify Us! Yes No

Comments

Write your comment here...

Login To Add Comment

NO COMMENTS TO SHOW

SUBSCRIBE TO OUR NEWS LETTER

COLLEGE NOTIFICATIONS • EXAM NOTIFICATIONS • NEWS UPDATES

ENTER YOUR EMAIL ID +91 ENTER YOUR MOBILE NO CHOOSE YOUR COURSE SUBMIT