

JEE MAIN THERMAL PROPERTIES OF MATTER — HEAT TRANSFER: RADIATION (BLACK BODY, WIEN'S LAW, STEFAN'S LAW) — PYQS

Max. Marks: 8
Questions: 2

Section A (MCQ) — 1 question

- Q.1** Two spherical bodies of same materials having radii 0.2 m and 0.8 m are placed in same atmosphere. The temperature of the smaller body is 800 K and temperature of the bigger body is 400 K . If the energy radiated from the smaller body is E, the energy radiated from the bigger body is (assume, effect of the surrounding temperature to be negligible),

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

- (1) 64 E (2) 16 E (3) E (4) 256 E

Scan or tap for the
full solution



Section B (Numerical) — 1 question

- Q.2** A wire of length 10 cm and diameter 0.5 mm is used in a bulb. The temperature of the wire is 1727°C and power radiated by the wire is 94.2 W. Its emissivity is $\frac{x}{8}$ where $x = \underline{\hspace{2cm}}$.

(Given $\sigma = 6.0 \times 10^{-8} \text{ W m}^{-2} \text{ K}^{-4}$, $\pi = 3.14$ and assume that the emissivity of wire material is same at all wavelengths.)

[JEE Main 2025 (Online) 7th April Morning Shift]

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full solution



ANSWER KEY

Section A (MCQ) — 1 question

Ques.	1										
Ans.	3										

Section B (Numerical) — 1 question

Ques.	2										
Ans.	5										