

## Answer on Question #58130, Physics / Mechanics | Relativity |

19 The predominant mode of heat transfer in solids is -----

convection

**conduction**

radiation

diffusion

**Solution:**

Conduction is the most significant means of heat transfer within a solid or between solid objects in thermal contact.

**Answer: conduction**

20 A piece of plastic barely floats in water. If it has a mass of 20g, what is its volume?

30cm<sup>3</sup>

**20cm<sup>3</sup>**

10cm<sup>3</sup>

2cm<sup>3</sup>

**Solution:**

Newton's second law for the piece of plastic on Y-axis:

$$mg - F_A = 0$$

The Archimedes force is

$$F_A = \rho g V$$

where  $\rho = 1 \text{ g/cm}^3$  is density of water.

$$mg - \rho g V = 0$$

Thus,

$$V = \frac{m}{\rho} = \frac{20}{1} = 20 \text{ cm}^3$$

**Answer: 20 cm<sup>3</sup>**