

CLASS 7

SCIENCE

EXTRA QUESTIONS

Extra Questions for Class 7 Science Chapter 7: Heat Transfer in Nature

Fresh practice questions for Class 7 Science Chapter 7 "Heat Transfer in Nature", designed to reinforce conduction, convection, radiation, and related earth-science concepts.

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Q1.

A metal spoon and a wooden spoon are both left in a hot cup of tea. Which one becomes hotter to touch faster, and why?

Answer: The **metal spoon**, because metals are good conductors of heat and transfer heat quickly through conduction, whereas wood is a poor conductor and heats up much more slowly.

Q2. Assertion-Reason

Assertion (A): Woollen clothes keep us warm in winter.

Reason (R): Wool traps air, which is a poor conductor of heat, reducing heat loss from the body.

Answer: Both A and R are true, and R correctly explains A.

Q3.

Explain why we can feel the heat of a bonfire even while standing several metres away from it, with no direct contact or air current toward us.

Answer: Heat reaches us through **radiation**, which does not require a medium (unlike conduction or convection) and can travel through open space directly from the fire to our skin.

Q4. Spot the error

A student wrote: “Convection can occur in solids, liquids, and gases equally well.” Identify and correct the error.

Answer: This is incorrect. Convection requires the actual movement of heated particles, which is only possible in **liquids and gases** (fluids). In solids, particles are fixed in place, so heat transfers only through **conduction**, not convection.

Q5. HOTS

Why do coastal cities often have milder temperature swings between day and night compared to inland cities far from any large water body?

Answer: Water heats up and cools down more slowly than land. During the day, the sea breeze (cooler air moving from sea to land) moderates daytime heat; at night, the land breeze (cooler air moving from land to sea) prevents excessive cooling. This continuous exchange keeps coastal temperatures more stable than inland areas, which lack this moderating effect.

Q6.

Why are cooking pot handles often made of plastic or wood rather than metal?

Answer: Plastic and wood are poor conductors of heat, so they stay cool enough to hold safely even when the metal pot itself becomes very hot from conduction.

Q7.

A farmer wants to store rainwater underground for later use. Which soil type (clay, sand, or gravel) would allow the water to infiltrate fastest, and why?

Answer: Gravel, since it has the largest particles and pore spaces among the three, allowing water to seep through and infiltrate the ground fastest.

Q8.

Explain, step by step, how a single water molecule might travel from the ocean, become rain, and eventually end up as groundwater.

Answer: The water molecule evaporates from the ocean surface due to the Sun's heat, rises and cools in the atmosphere to condense into a cloud droplet, falls back to Earth as precipitation (rain), and then infiltrates through soil and porous rock into an aquifer, where it is stored as groundwater.

Q9.

Why does an incense stick's smoke rise upward even when the stick is pointed straight down?

Answer: The smoke itself consists of hot gases and fine particles, which are lighter than the surrounding cooler air. Regardless of the stick's orientation, this hot smoke still rises upward due to convection.

Q10.

Two identical metal rods, one painted black and one painted white, are placed in direct sunlight. Which one is likely to feel hotter after some time, and why?

Answer: The **black rod** is likely to feel hotter, since darker (black) surfaces absorb radiant heat more effectively than lighter (white) surfaces, which reflect more radiation.

NCERT Solutions: [Class 7 Science Chapter 7](#)

Revision Notes: [Class 7 Science Chapter 7 Revision Notes](#)