

CLASS 8

SCIENCE

EXTRA QUESTIONS

Extra Questions: Class 8 Science Chapter 6 Pressure Winds Storms and Cyclones

Practice questions beyond the textbook exercise, testing deeper understanding of pressure, wind formation, and storms for Class 8 Science Chapter 6: Pressure, Winds, Storms and Cyclones.

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1 (Assertion-Reason). Assertion: A sea breeze blows from sea to land during the day. Reason: Land heats up faster than the sea, creating a low-pressure region over land.

Solution: Both true, and the reason correctly explains the assertion — cooler, higher-pressure air over the sea flows in to replace the rising warm air over land.

2 (Numerical). A block exerts a force of 500 N on the ground through a base of area 0.5 m^2 . Find the pressure.

Solution: Pressure = Force $\div$ Area = $500 \div 0.5 = 1000 \text{ Pa}$.

3 (Short Answer). Why do camels have wide, flat feet?

Solution: Wide feet spread the camel's weight (force) over a larger area, reducing the pressure it exerts on soft desert sand so it doesn't sink in.

4 (Applied). A nail with a tip of area 0.001 m^2 is struck with a force of 50 N. Find the pressure at the tip.

Solution: Pressure = $50 \div 0.001 = 50000 \text{ Pa}$ — the tiny tip area is what lets a modest force pierce a surface.

5 (Assertion-Reason). Assertion: It is calm at the eye of a cyclone. Reason: The eye is a region of very high pressure surrounded by a ring of the highest wind speeds.

Solution: Assertion is true, but the **reason is false** — the eye is actually a region of very *low* pressure, not high; it's calm precisely because it's the centre that surrounding winds spiral into.

6 (Numerical). Two identical vessels hold water to heights of 20 cm and 40 cm. Compare the pressure at their bases.

Solution: Liquid pressure is proportional to the height of the column (for the same liquid), so the vessel with 40 cm of water has **double** the pressure at its base compared to the one with 20 cm.

7 (Synthesis). Explain, using the idea of pressure difference and force, why holes are made in banners during storms.

Solution: Without holes, wind builds up high pressure on the windward face and low pressure behind, and this pressure difference creates a strong net force that can tear the banner loose. Holes let air pass through, equalising pressure on both faces and sharply reducing the net force.

8 (Applied). Why is it unsafe to stand under an isolated tall tree during a thunderstorm?

Solution: A tall, isolated object offers the shortest, easiest path for a lightning discharge to reach the ground; standing beneath it puts a person directly in that current's path.

9 (Short Answer). Why do your ears "pop" when going up quickly in a lift or a plane?

Solution: Outside air pressure drops as you rise, while the air trapped in your middle ear briefly stays at the higher pressure; the popping is the pressure equalising through the Eustachian tube.

10 (Assertion-Reason). Assertion: A cyclone forms only over warm ocean water, not directly over land. Reason: Warm ocean water sustains continuous evaporation and releases the latent heat needed to keep the low-pressure system intensifying.

Solution: Both true, and the reason correctly explains the assertion — once a cyclone moves onto land, it's cut off from this moisture/heat source and rapidly weakens.

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