

Everyday Science Questions Answered - Part 1

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1. **Question:** A man with a load jumps from a high building. What will be the load experienced by him?

Answer: Zero, because while falling, both the man and the load are falling at the same acceleration i.e. acceleration due to gravity.

2. **Question:** A piece of chalk when immersed in water emits bubbles. Why?

Answer: Chalk consists of pores forming capillaries. When it is immersed in water, the water begins to rise in the capillaries and air present there is expelled in the form of bubbles.

3. **Question:** Why does a liquid remain hot or cold for a long time inside a thermos flask?

Answer: The presence of air, a poor conductor of heat, between the double glass wall of a thermos flask, keeps the liquid hot or cold inside a flask for a long time.

4. **Question:** Why does a ball bounce upon falling?

Answer: When a ball falls, it is temporarily deformed. Because of elasticity, the ball tends to regain its original shape for which it presses the ground and bounces up (Newton's Third Law of Motion).

5. **Question:** Why is standing in boats or double decker buses not allowed, particularly in the upper deck of buses?

Answer: On tilting the centre of gravity of the boat or bus is lowered and it is likely to overturn.

6. **Question:** Why is it recommended to add salt to water while boiling dal?

Answer: By addition of salt, the boiled point of water gets raised which helps in cooking the dal sooner.

7. **Question:** Why is it the boiling point of sea water more than that of pure water?

Answer: Sea water contains salt, and other impurities which cause an elevation in its boiling point.

8. **Question:** Why is it easier to spray water to which soap is added?

Answer: Addition of soap decreases the surface tension of water. The energy for spraying is directly proportional to surface tension.

9. **Question:** Which is more elastic, rubber or steel?

Answer: Steel is more elastic for the same stress produced compared with rubber.

10. **Question:** Why is the sky blue?

Answer: Violet and blue light have short waves which are scattered more than red light waves. While red light goes almost straight through the atmosphere, blue and violet light are scattered by particles in the atmosphere. Thus, we see a blue sky.

11. **Question:** Why Does ink leak out of partially filled pen when taken to a higher altitude?

Answer: As we go up, the pressure and density of air goes on decreasing. A Partially filled pen leaks when taken to a higher altitude because the pressure of air acting on the ink inside the tube of the pen is greater than the pressure of the air outside.

12. Question: On the moon, will the weight of a man be less or more than his weight on the earth?

Answer: The gravity of the moon is one-sixth that of the earth; hence the weight of a person on the surface of the moon will be one-sixth of his actual weight on earth.

13. Question: Why do some liquid burn while others do not?

Answer: A liquid burns if its molecules can combine with oxygen in the air with the production of heat. Hence, oil burns but water does not.

14. Question: Why can we see ourselves in a mirror?

Answer: We see objects when light rays from them reach our eyes. As mirrors have a shiny surface, the light rays are reflected back to us and enter our eyes.

15. Question: Why does a solid chunk of iron sink in water but float in mercury?

Answer: Because the density of iron is more than that of water but less than that of mercury.

16. Question: Why is cooking quicker in a pressure cooker?

Answer: As the pressure inside the cooker increases, the boiling point of water is raised, hence, the cooking process is quicker.

17. Question: When wood burns it crackles. Explain?

Answer: Wood contains a complex mixture of gases and tar forming vapors trapped under its surface. These gases and tar vapors escape, making a cracking sound.

18. Question: Why do stars twinkle?

Answer: The light from a star reaches us after refraction as it passes through various layers of air. When the light passes through the earth's atmosphere, it is made to flicker by the hot and cold ripples of air and it appears as if the stars are twinkling.

19. Question: Why is it easier to roll a barrel than to pull it?

Answer: Because the rolling force of friction is less than the dynamic force of sliding friction.

20. Question: If a feather, a wooden ball and a steel ball fall simultaneously in a vacuum, which one of these would fall faster?

Answer: All will fall at the same speed in vacuum because there will be no air resistance and the earth's gravity will exert a similar gravitational pull on all.

21. Question: When a man fires a gun, he is pushed back slightly. Why?

Answer: As the bullet leaves the nozzle of the gun's barrel with momentum in a forward direction, as per Newton's Third Law of Motion, the ejection imparts to the gun an equal momentum in a backward direction.

22. Question: Ice wrapped in a blanket or saw dust does not melt quickly. Why?

Answer: Both wood and wool are bad conductors of heat. They do not permit heat rays to reach the ice easily.

23. Question: Why do we perspire on a hot day?

Answer: When the body temperature rises, the sweat glands are stimulated to secrete perspiration. It is nature's way to keep the body cool. During the process of evaporation of sweat, body heat is taken away, thus giving a sense of coolness.

24. Question: Why does ice float on water but sink in alcohol?

Answer: Because ice is lighter than water it floats on it. However, ice is heavier than alcohol and therefore it sinks in alcohol.

25. Question: Why do we perspire before rains?

Answer: Before the rain falls, the atmosphere gets saturated with water vapors; as a result, the process of evaporation of sweat is delayed.

26. Question: How do birds sit safely on electric power lines?

Answer: This is possible because a bird only touches one line. If the bird were to touch another line or pole the electricity would travel through the bird, either to the ground or another wire.