

## Chapter-14 Chemical Effects Of Electric Current

1. *When the free ends of a tester are dipped into a solution, the magnetic needle shows deflection. Can you explain the reason?*  
*Electric current produces magnetic effect which causes deflection of the magnetic needle of a compass. So, when the free ends of a tester are dipped into a solution which is a good conductor of electricity, the needle shows deflection.*
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2. *Does pure water conduct electricity? If not, what can we do to make it conducting?*  
*No. Pure water does not conduct electricity. Pure water can conduct electricity when a pinch of common salt is added to it, as salt solution is conducting in nature.*
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3. *In case of a fire, before the firemen use the water hoses, they shut off the main electrical supply for the area. Explain why they do this.*  
*Water may conduct electricity. If the electrical supply for the area is not shut off and water is poured over electrical appliances, then electricity may pass through water and harm the firemen. That is why, in case of a fire, the firemen shut off the main electrical supply for the area before they use the water hoses.*
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4. *A child staying in a coastal region tests the drinking water and also the seawater with his tester. He finds that the compass needle deflects more in the case of seawater. Can you explain the reason?*  
*Sea water contains more dissolved salts than the drinking water.*

*Hence, it is more conducting than the drinking water. Because of this reason, the compass needle deflects more in seawater than in the drinking water.*

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5. *Is it safe for the electrician to carry out electrical repairs outdoors during heavy downpour? Explain.*

*No, it is very risky and unsafe for the electrician to carry out electrical repairs outdoors during heavy downpour because rain water contains dissolved salts. Therefore, rain water can conduct electricity. The electrician may get electrical shocks while working outdoors during rain.*

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6. *Paheli had heard that rain water is as good as distilled water. So, she collected some rain water in a clean glass tumbler and tested it using a tester. To her surprise, she found that the compass needle showed deflection. What could be the reasons?*

*Rain water contains dissolved salts. This makes it a conducting solution. There are no dissolved salts present in the distilled water. Hence, rain water can allow electricity to pass through it while distilled water cannot.*

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7. *Prepare a list of objects around you that are electroplated.*

- i. Cars bumpers and cycles handles are chromium plated to give them shiny appearance.*
  - ii. Artificial jewellery items are gold or silver plated.*
  - iii. Iron used in constructing a building is coated with a layer of zinc to protect it from rusting.*
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8. *The process that you saw in Activity 14.7 is used for purification of copper. A thin plate of pure copper and a thick rod of impure copper are used as electrodes. Copper from impure rod is sought to be transferred to the thin copper plate. Which electrode should be attached to the positive terminal of the battery and why?*

*Copper ion is positively charged. It is attracted towards the plate which is connected to the negative terminal of the battery. As copper ions are transferred to the thin copper plate, this thin pure copper plate must be connected to the negative terminal of the battery. Consequently, impure copper rod is connected to the positive terminal of the battery.*

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