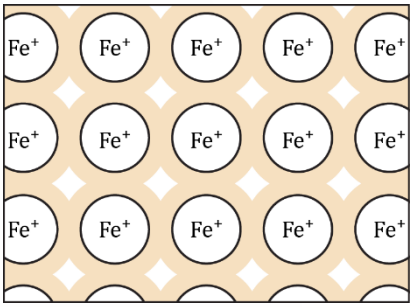
Iron – a metal: true or false?



The statements below refer to the diagram of the structure of iron. The diagram shows part of a slice through the three-dimensional structure.

Read each statement carefully and decide if it is correct or not. **Circle your answer.**

1. Iron has a type of bonding called metallic bonding. **True / False**
2. Iron atoms do not have a full outer shell of electrons and this makes iron very reactive. **True / False**
3. Iron is a silvery-grey metal because iron atoms are silvery-grey. **True / False**
4. Iron can conduct electricity because iron atoms can slip over their neighbours and move through the solid. **True / False**
5. Iron can be re-shaped, without changing the shape of iron atoms. **True / False**
6. Iron rusts because iron atoms will rust if exposed to damp air. **True / False**
7. In iron metal, each atom is bonded to each of the other iron atoms surrounding it. **True / False**
8. Iron conducts electricity because iron atoms are electrical conductors. **True / False**
9. Iron is a solid because that is the natural state for metals. **True / False**
10. A metal consists of positive metal ions and negative electrons which move around the solid between the ions. **True / False**
11. An iron atom will reflect light and so freshly polished iron shines. **True / False**
12. Iron becomes a liquid when heated because the bonds melt. **True / False**
13. Iron conducts electricity because it contains a ‘sea’ of electrons. **True / False**
14. The atoms in iron are held together by ionic bonds. **True / False**
15. Iron conducts heat because there is room between the atoms for hot air to move through the metal. **True / False**
16. Iron is hard because iron atoms are hard. **True / False**
17. Iron contains molecules held together by magnetism. **True / False**
18. If iron is heated to a very high temperature, it will become a gas. **True / False**
19. Iron expands when it is heated because iron atoms get bigger. **True / False**
20. Chemical bonds are needed to hold the atoms together in iron, even though all of the atoms are of the same type. **True / False**