

4. (d)
5. (b)
6. (a)
7. (c)
8. (b)
9. (a)
10. (a)
11. (c)
12. (d)
13. False — this scale is precise, but not accurate.
14. True
15. False — matter is anything that has mass and occupies space.
16. False — the three standard states of matter that exist at room temperature are solid, liquid, and gas.
17. False — when iron rusts, elements becomes a compound. This is a chemical change.
18. False — acid rain is a solution.
19. False — when water melts, a physical change occurs.
20. False — to change water from ice to liquid - energy must be added to the water.
21. False — a gold ring is an alloy of gold, which is a homogenous mixture.
22. False — water is an example of a compound.
23. True
24. True
25. False — the number of particles, such as molecules, may be different, but the number of atoms of each element is the same.

Answers to Short Answer Questions

26. Examples of everyday reactions include iron rusting, food cooking, plants growing, and food digesting.
27. In a cylinder of pure nitrogen gas, you would find nitrogen-14 and nitrogen-15 — two different types of atoms.
28. (a) K, Na, H
(b) Mg, Si, S
(c) K, Cl, Ar
29. (a) B, N, F
(b) Br, Cl, F
(c) Cs, K, Na
30. (a) Ca, Mg, Be
(b) Se, Br, Kr
(c) Cs, K, Na
31. (a) ammonium nitrate
(b) lead(IV) acetate
(c) Disulfur dichloride
(d) barium nitrite
(e) tetraphosphorus decaoxide
(f) manganese(III) oxide
32. (a) SrCl_2
(b) PbSO_3
(c) $\text{Cr}(\text{CH}_3\text{COO})_3$
(d) H_2S
(e) IF_7