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**Study Guide: Section 1.2**

**Completion**

*Complete each statement.*

 1. An atom is the unit of matter that maintains its chemical identity.

 2. A mixture is a blend of any two or more kinds of that maintain its own unique properties.

 3. A compound is a substance, made of two or more atoms that are bonded, that can be broken down into simpler, stable subsances.

 4. The substances that are formed by a chemical change are called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 5. When examining a mineral, hardness and color are two of the properties used for identification. Hardness and color are examples of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ properties.

 6. The melting of butter is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ change because it does not produce any new substances.

 7. The oxygen in air causes iron to rust. Iron and oxygen are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in this process, and rust is the product.

 8. A sample of matter can be poured from container to container. It takes the shape of its container but only takes up a certain volume. Based on this information, the sample is in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ state.

 9. The particles of a substance in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are able to slide past each other.

 10. Matter that has *neither* a definite volume *nor* a definite shape is in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ state.

 11. An alloy such as a gold ring is an example of a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mixture.

 12. Gravel is an example of a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mixture.

 13. A mixture that has the same proportion of components throughout is considered to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 14. In a bonfire, oxygen allows wood to combust, leaving behind ashes. In this process, oxygen and wood are the reactants, and ashes are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 15. The state of matter in which a material has a definite volume and a definite shape is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 16. The smallest unit of an element that has the properties of that element is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

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 17. A blend of two or more kinds of matter, each of which retains its own identity and properties, is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 18. If a material is tested and every sample has exactly the same properties and the same composition, it is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 19. Volume, mass, and the amount of energy in a substance are all examples of properties.

 20. properties do not depend on the amount of matter present.

 21. The two properties that all matter have are the ability to take up space and having .

 22. is the fourth state of matter.

 23. In the plasma state, atoms electrons.

 24. When a substance changes state, the energy is neither created nor distroyed, it form.

 25. The two types of matter that are pure substances are and .

 26. Under normal conditions of temperature and pressure, the particles in a gas are apart from each other.

**Classify each of the following as either a *physical change* or a *chemical change.***

 27. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ melting an ice cube

 28. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ burning a piece of paper

 29. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ slicing a loaf of bread

 30. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ sharpening a pencil

 31. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ decomposing mercury(II) oxide

 32. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dissolving sugar in water

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**Short Answer**

**Write the answers to the following questions in the space provided**

 33. Explain the differences between solid, liquid, and gaseous states in terms of the arrangement of the particles.

 34. Contrast mixtures and pure substances.

 35. Contrast heterogeneous and homogeneous mixtures.