UNIQUE STUDY POINT

MATERIAL AROUND US

Class 06 - Science (NEW)

Time Allowed: 37 minutes **Maximum Marks: 24**

1. Would it be a good idea to use paper-like materials for making cooking utensils? **[1]**
2. Is water transparent? Can it be made opaque? **[2]**
3. Does everything you put in water disappear? **[2]**
4. Are there any properties which can be shown by all materials? If yes, what are those? **[2]**
5. Unscramble the letters (Column I) and match with their properties (Column II). **[1]**

Column I	**Column II**
(i) T R E M A T	(a) Objects can be seen clearly through it
(ii) U L S B E L O	(b) Occupies space and has mass
(iii) T N E R P A S N A R T	(c) Shiny surface
(iv) E R U S T L	(d) Mixes completely in water

6. The containers which are used to store materials in shops and at home are usually transparent. Give your reasons for this. **[1]**
7. State whether the given statement is True or False: **[1]**
   Wood is translucent while glass is opaque.
8. State whether the given statement is True or False: **[1]**
   Aluminium foil has lustre while an eraser does not.
9. State whether the given statement is True or False: **[1]**
   Sugar dissolves in water whereas sawdust does not.
10. State whether the given statement is True or False: **[1]**
    An apple is a matter because it occupies no space and has mass.
11. We see chairs made up of various materials, such as wood, iron, plastic, bamboo, cement and stones. Following are some desirable properties of materials which can be used to make chairs. Which materials used to make chairs fulfil these properties the most? **[2]**
    i. Hardness (does not bend or shake on sitting even after long use).
    ii. Lightweight (easy to lift or to take from one place to another).
    iii. Does not feel very cold when sitting during winters.
    iv. Can be cleaned regularly and made to look new even after long use.
12. You need to have containers for collection of (i) food waste, (ii) broken glass and (iii) wastepaper. Which materials will you choose for containers of these types of waste? What properties of materials do you need to think of? **[2]**
13. Air is all around us but does not hinder us from seeing each other. Whereas, if a wooden door comes in between, we cannot see each other. It is because air is _____ and the wooden door is _____. Choose the most appropriate option: **[1]**

a) opaque, translucent

b) transparent, translucent

c) transparent, opaque

d) translucent, transparent

14. Imagine you have two mysterious materials, X and Y. When you try to press material X, it feels rigid and does not change its shape easily. On the other hand, material Y easily changes its shape when you press it. Now, when you mix both materials in water, only material X dissolves completely, while material Y remains unchanged. What can materials X and Y be? Can you identify whether material X is hard or soft? What about material Y? Justify your answer. **[2]**

15. i. Who am I? Identify me on the basis of the given properties. **[2]**

a. I have lustre. _____

b. I can be easily compressed. _____

c. I am hard and soluble in water. _____

d. You cannot see clearly through me. _____

e. I have mass and volume but you cannot see me. _____

ii. Make your own **Who am I?**

16. You are provided with the following materials - vinegar, honey, mustard oil, water, glucose and wheat flour. Make any two pairs of materials where one material is soluble in the other. Now, make two pairs of materials where one material remains insoluble in the other material. **[2]**

Solution

MATERIAL AROUND US

Class 06 - Science (NEW)

1. Using paper-like materials for making cooking utensils is not ideal due to their low heat resistance, durability issues, and potential food safety concerns. Paper materials generally can't withstand high temperatures, are prone to degradation with moisture, and might leach harmful substances into food. While they are biodegradable, their practicality for cooking utensils is limited compared to more durable, heat-resistant materials.
2. **Yes, pure water is transparent.** This means light can pass through it easily without being blocked.

   Water can be made opaque by:

   - **Adding particles:** Substances like dirt, mud, or even milk can make water cloudy or opaque by scattering light.
   - **Increasing thickness:** A thick layer of water can absorb more light, making it appear less transparent.
   - **Changing its state:** When water freezes into ice, it can become opaque due to the formation of crystal structures.
3. **No, not everything you put in water disappears.**

   While some substances might dissolve in water and seem to disappear, they're actually just spreading out evenly among the water molecules. For example, sugar dissolves in water, but it's still there.

   Other things, like rocks or coins, don't dissolve. They stay the same but are now surrounded by water.

   There are also things that float on water, like leaves or wooden blocks. They don't disappear, but their position changes.
4. **Universal Properties of Matter**

   While specific properties vary widely between different materials, there are a few fundamental characteristics shared by all matter:

   - **Mass:** All matter has mass, which is a measure of the amount of substance it contains.
   - **Volume:** All matter occupies space, having a specific volume.
   - **Weight:** Due to gravity, all matter has weight, which is the force exerted on it by gravity.
   - **Inertia:** This is the resistance of an object to changes in its motion. All matter exhibits inertia.

   These properties are essential to understanding the behavior of matter in the universe.
5.

Column I	**Column II**
(i) T R E M A T → MATTER	(a) Occupies space and has mass
(ii) U L S B E L O → SOLUBLE	(b) Mixes completely in water
(iii) T N E R P A S N A R T → TRANSPARENT	(c) Objects can be seen clearly through it
(iv) E R U S T L → LUSTRE	(d) Shiny surface

6. Transparent containers are used because they allow easy identification of the contents without opening the container. This makes it convenient to find and access items quickly.
7. **(b)** False
   Explanation:
   Wood is opaque while glass is translucent.
8. **(a)** True
   Explanation:
   True
9. **(a)** True
   Explanation:
   True
10. **(b)** False
    Explanation:
    An apple is a matter because it occupies space and has mass.
11. i. Hardness: **Wood, iron**
    ii. Lightweight: **Plastic, bamboo**
    iii. Does not feel very cold when sitting during winters: **Wood, bamboo**
    iv. Can be cleaned regularly and made to look new even after long use: **Plastic, iron**
12. i. **Food waste:** Plastic or metal containers that are durable and easy to clean.
    ii. **Broken glass:** Metal or hard plastic containers that are sturdy and puncture-resistant.
    iii. **Wastepaper:** Lightweight plastic or cardboard containers that are easy to handle and inexpensive.
13. **(c)** transparent, opaque
    Explanation:
    transparent, opaque
14. Material X could be salt (hard and soluble in water).
    Material Y could be rubber (soft and insoluble in water).
    Material X is hard because it does not change shape easily and dissolves in water.
    Material Y is soft because it changes shape easily and does not dissolve in water.
15. i. Identification on the basis of the given properties:
        a. I have lustre. → Metal
        b. I can be easily compressed. → Gas
        c. I am hard and soluble in water. → Salt
        d. You cannot see clearly through me. → Opaque object
        e. I have mass and volume but you cannot see me. → Air
    ii. Make your own 'Who am I?'
        a. I am a liquid.
        b. I am commonly used in cooking.
        c. I am made from crushed seeds.
        d. I do not mix well with water.

e. I am used to fry food.

Who am I? → Oil

16. **Soluble pairs**
    i. Vinegar and water
    ii. Glucose and water

    Insoluble pairs
    i. Mustard oil and water
    ii. Wheat flour and water