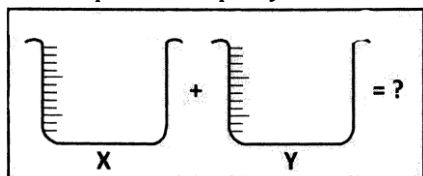
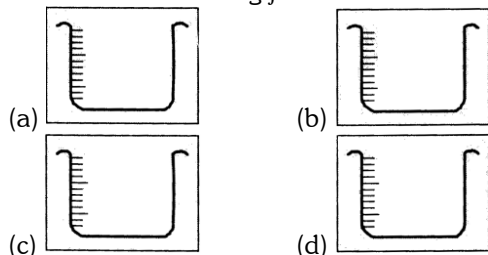


Sorting Materials into Groups

1. X is a liquid that is partly soluble in liquid Y. Equal volumes of each liquid are taken in two jars as shown below.



Which of the following jars shows the most likely outcome if the two liquids are mixed?



2. Which of the following materials is hard, opaque and shines?
- (a) Rubber (b) Wood
(c) Tin (d) Plastic
3. Which property of clay is useful for making pots and bricks?
- (a) Opacity
(b) Non-magnetic nature
(c) A good conductor of heat
(d) Malleability
4. Which of the following materials is suitable to make raincoats?
- (a) Cotton (b) Plastic
(c) Silk (d) Paper
5. Why are most of the balloons, tyres and footballs made of rubber?
- (a) It is naturally available.
(b) It is cheap.
(c) It is an electrical insulator.
(d) It is soft and flexible.
6. What is the criteria on which the process of classification of substances is based on?
- (a) Similarities (b) Differences
(c) Interrelationships (d) All the above
7. If opacity is the distinct feature of wood, then what is glass known for in the same way?
- (a) Its transparency
(b) Its magnetic nature
(c) Its conductivity to heat
(d) Its lustrous nature
8. A mirror is
- (a) opaque. (b) transparent.
(c) translucent. (d) flexible.

9. When Amrita was asked to pick up a few articles from a collection, she picked up the following:

- Wooden scale
- Glass test tube
- Paper basket

Which of the following articles is she most likely to pick up the next?

- (a) Steel cup (b) Iron chain
(c) Rubber gloves (d) Copper wire

10. What are opaque objects?

- (a) Those that reflect most of the light falling on them.
(b) Those that transmit most of the light falling on them.
(c) Those that refract most of the light falling on them.
(d) Those that are strong and hard.

11. Which characteristics given below are of metals?

- (i) They are hard.
- (ii) They have lustre.
- (iii) They are good conductors of electricity

- (a) Only (i) and (ii)
(b) Only (ii) and (iii)
(c) Only (i) and (iii)
(d) (i), (ii) and (iii)

12. Clinical thermometers are made of glass. Identify the characteristic(s) considered for the selection.

- (i) It is a bad conductor of heat
- (ii) It is transparent
- (iii) It is strong

- (a) Only (i) and (ii) (b) Only (ii) and (iii)
(c) Only (i) and (iii) (d) (i), (ii) and (iii)

13. Why are paper bags preferred over plastic bags?

- (a) Paper bags are lighter.
(b) Paper bags are stronger.
(c) Paper bags are cheap.
(d) Paper bags are biodegradable.

14. A vendor sells white powdered salt mixed with white powdered stone. Which of these properties will help you detect this malpractice?

- (a) Ductility
(b) Opacity
(c) Density
(d) Solubility

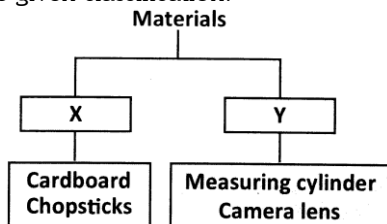
15. Even though a cinema hall is a place prone to fire hazards, the interiors are mostly made up of wooden panels. Why is this so?

- (a) It does not catch fire easily.
(b) It is opaque.
(c) It absorbs sound.
(d) It is very commonly available.

- 16.** Door locks are made of metals. Which property of metals is made use of?
 (a) They have lustre.
 (b) They are opaque.
 (c) They are good conductors of heat.
 (d) They are hard and strong.
- 17.** Out of our total body weight, about two- thirds is made up of water. It is important to have a regular intake of water. Why?
 (a) Water has lots of vitamins and proteins.
 (b) Water can dissolve a lot of substances.
 (c) Water conducts heat very fast and thereby maintains the body temperature.
 (d) Water helps in maintaining the electrolytic balance in our body.
- 18.** 1 kg of iron occupies less space compared to 1 kg of sponge. Why?
 (a) Iron has less density than sponge.
 (b) Iron and sponge have equal densities.
 (c) Iron has more density than sponge.
 (d) Weight of iron per unit volume is less than that of sponge.
- 19.** Which state of matter is easy to be compressed?
 (a) Liquid (b) Gaseous
 (c) Solid (d) Both (A) and (C)
- 20.** Upon heating/solids usually turn into
 (a) liquids. (b) gases.
 (c) mixtures. (d) either (A) or (C).
- 21.** Salt dissolves in water to form salt water. Identify the solvent.
 (a) Salt (b) Water
 (c) Salt-water (d) Salt and water
- 22.** Sugar dissolves in water. Identify the solute.
 (a) Sugar (b) Water
 (c) Sugar-water (d) Sugar and water
- 23.** Kerosene does not dissolve in water. What are they called?
 (a) Immiscible liquids
 (b) Solute and solvent
 (c) Solvent and solution
 (d) Miscible liquids
- 24.** Milk and water dissolve in each other. What are they called?
 (a) Immiscible liquids
 (b) Solvent and solutions
 (c) Miscible liquids
 (d) Suspensions
- 25.** Which is the most essential property of a substance to be used as a cooking vessel?
 (a) Good conductor of heat
 (b) Ductility
 (c) Malleability
 (d) All of the above

26. Which of the following is true of pure water?
 (a) A good conductor of electricity
 (b) A bad conductor of electricity
 (c) A semiconductor
 (d) A superconductor
27. Which of the combinations is the odd one out?
 (a) Ink and water
 (b) Milk and water
 (c) Oil and water
 (d) Lime juice and water
28. Which of the following type of bodies form sharp shadows when placed in the path of light?
 (a) Transparent
 (b) Translucent
 (c) Transparent and translucent
 (d) Opaque
29. Which instrument is used to measure the density of liquids?
 (a) Hydrometer (b) Hygrometer
 (c) Density meter (d) Ammeter

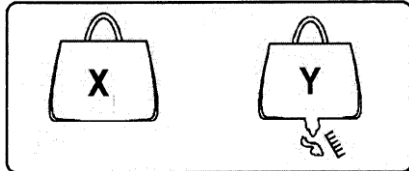
30. Read the given classification.



Which of the following materials are used in the making of 'X' and 'Y'?

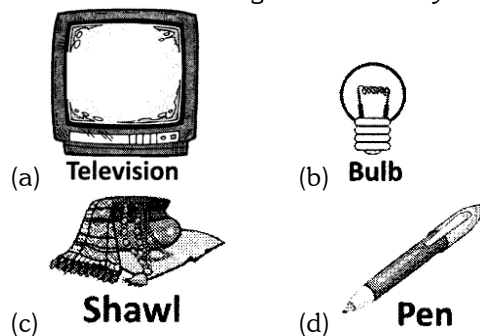
- (a) Wood metal (b) Plastic, glass
 (c) Bamboo glass (d) Bamboo/plastic
31. Which of the given objects is hard/strong and unbreakable?
 (a) Aluminium foil (b) Paper bag
 (c) Plastic file (d) Glass table top
32. Which of the following materials is used to make an electric iron?
 (i) Plastic
 (ii) Metal
 (iii) Glass
- (a) Only (i)
 (b) Only (i) and (ii)
 (c) Only (ii) and (iii)
 (d) (i), (ii) and (iii)
33. Nishant put an object in front of a beam of light and noticed that a dark sharp shadow was immediately formed. What type of object did he place in front of light?
 (a) A transparent object
 (b) A translucent object
 (c) An opaque object
 (d) A flexible object

34. Mohan is able to bend the rod because it is
 (a) light.
 (b) hard.
 (c) water proof.
 (d) flexible.
35. Suresh put the same things in two different bags X and Y. However bag Y could not hold all the items and got torn.



What did Suresh conclude?

- (a) Bag 'X' is more flexible than bag T.
 (b) Bag T is lighter than bag X
 (c) Bag T is softer than bag 'X'.
 (d) Bag 'X' is stronger than bag T.
36. A student added blue ink to a beaker containing water. After a few minutes the colour of water changed to blue. Which of these properties led to this colour change?
 (a) Miscibility (b) Malleability
 (c) Ductility (d) Compressibility
37. Which of the following statements is correct?
 (a) Only some hard substances sink.
 (b) All soft objects can be torn easily.
 (c) All soft objects float in water.
 (d) Some soft substances sink.
38. Which of the following is made of only one material?



39. The table given below shows some objects that have been grouped based on a certain property.

P	Q
Wooden ruler	Iron rod
Copper wire	Steel spoon
Plastic cup	

What is the property on which the objects have been grouped?

- (a) The ability to conduct electricity.
 (b) The ability to conduct heat.
 (c) The property of being attracted by a magnet.
 (d) The ability to reflect light.

40. How are the items given in the box grouped as?

- Ruler
- Sharpener
- Eraser
- Pencil
- Water colours

- (a) Stationary
- (b) Wooden
- (c) Plastic
- (d) Cutlery

41. Why does a drop of water that falls on a glowing electric bulb causes the bulb to burst?

- (a) Because glass conducts electricity.
- (b) Uneven cooling of the glass takes place.
- (c) Because water freezes the bulb.
- (d) Because glass conducts more heat.

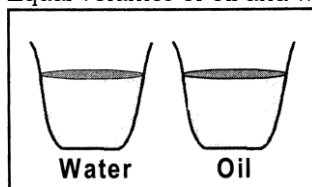
42. Which of the following is NOT a bad conductor of heat?

- (a) Wooden ruler
- (b) Plastic ruler
- (c) Iron ruler
- (d) All of the above

43. Which of the following is NOT attracted by a magnet?

- (a) Iron
- (b) Nickel
- (c) Cobalt
- (d) Chalk

44. Equal volumes of oil and water are taken in two glasses and weighed.



What is the likely outcome?

- (a) Oil weighs more.
- (b) Water weighs more.
- (c) Both oil and water weigh the same.
- (d) Water weighs less when heated.

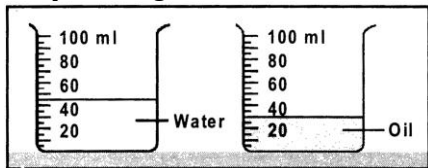
45. Which of the following properties cannot be used for distinguishing a solid from a liquid?

- (a) Solubility
- (b) Compressibility
- (c) Change of state
- (d) Conductivity

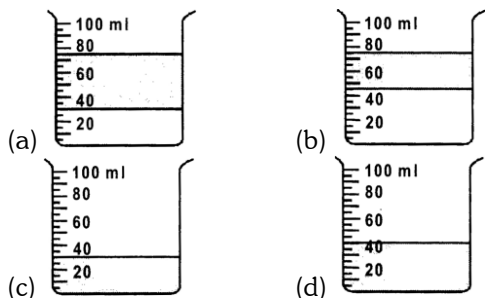
46. Which of these substances shows solubility in water?

- (a) Sand
- (b) Salt
- (c) Chalk
- (d) Iron pieces

47. Swapna was given two beakers having oil and water as shown below.



If all the water from the first beaker is poured into the beaker of oil, then which of the following correctly represents the above?



48. Why are overhead cables not insulated?
- Because air is a bad conductor of electricity.
 - Because air is a good conductor of electricity.
 - Bare wires conduct electricity better.
 - Both (B) and (C).
49. Which of the following objects is denser than water?
- A key
 - A sheet of paper
 - A leaf
 - A cork

50. The properties of copper are enlisted below.

- It is a good conductor of heat and electricity.
- It has lustre.
- Identify the correct set of properties of copper.

- Only (i)
 - Only (i) and (ii)
 - Only (ii) and (iii)
 - (i), (ii) and (iii)
51. Abhi bought an object. It is made of a hard material. It is fragile (easy to break) and allows light to pass through it. What can the object be?
- Shoes
 - Mirror
 - Cricket bat
 - Fish tank
52. Which of these properties of water helps in the washing of clothes?
- Transparency
 - Solubility
 - Conductivity
 - (d) Compressibility

53. Which of these states of matter cannot be compressed?

- (a) Liquids
- (b) Gases
- (c) Solids
- (d) Semi-solids

54. Ramesh observed the properties of 3 substances X, Y and Z and recorded his observations as given in the table below.

Property	X	Y	Z
Occupies space	Yes	Yes	Yes
Has a definite shape	No	Yes	No
Has a definite volume	No	Yes	Yes
Can be compressed	Yes	No	No

Which of the following is the correct representation of X, Y and Z?

	X	Y	Z
(a)	Magnet	Oxygen	Shampoo
(b)	Nitrogen	Petrol	Coin
(c)	Carbon dioxide	Rock	Syrup
(d)	Toothpaste	Pin	Hydrogen

Answers and Solutions

1. (b) Liquid X is partly soluble in liquid Y. Hence, there is a slight increase in the level of liquid when we mix both of them.
2. (c) Tin, being a metal is hard, opaque and has lustre.
3. (d) Pots and bricks are of different shapes and sizes. Clay has the property of malleability.
4. (b) Plastics do not absorb water. Hence, it is used for making raincoats.
5. (d) Air is filled in balloons, tyres and footballs.
Rubber being soft and flexible can easily withstand air pressure.
6. (d) Similarities, differences and interrelation- ships are the criteria for the grouping of substances.
7. (a) Wood is opaque whereas glass is transparent.
8. (a) A mirror is opaque as it reflects all the light falling on it.
9. (c) All the given articles are bad conductors of electricity. The next article she is going to pick up is rubber which is also a bad conductor of electricity.
10. (a) Opaque objects either absorb or reflect most of the light falling on them.
11. (d) Metals are hard, lustrous and good conductors of electricity.
12. (a) Glass is transparent and a bad conductor of heat. Glass is brittle not strong.
13. (d) Paper bags are preferred over plastic bags because they are biodegradable.
14. (d) Stone is insoluble in water whereas salt is soluble in water.
15. (c) For a clear audio in the theatres, it is necessary to cancel out the echo effects which are produced due to multiple reflections of sound. Wood is used, as it absorbs sound.

- 16.** (d) Door locks are meant for security. For this purpose, we have to choose metals which are hard and strong.
- 17.** (d) Water helps in the maintenance of the electrolytic balance in our body.
- 18.** (c) The density of iron is more than that of sponge.
- 19.** (b) In gases, the component particles are packed far apart. Hence, the particle space can be reduced by applying pressure.
- 20.** (a) On heating, the inter-particle space increases and because of this more movement of particles is possible and so they turn into liquids.
- 21.** (b) The solvent is water.
- 22.** (a) Sugar is the solute.
- 23.** (a) Kerosene and water are immiscible liquids.
- 24.** (c) Both milk and water are miscible liquids.
- 25.** (a) A cooking vessel must be a good conductor of heat.
- 26.** (b) Pure water does not contain any impurities or electrolytes. It is a bad conductor of electricity.
- 27.** (c) Ink and water, milk and water, lime and water are miscible liquids. Oil and water are immiscible liquids.
- 28.** (d) Opaque objects which do not allow light to pass through them cast shadows.
- 29.** (a) Hydrometer is an instrument used to measure the density of liquids.
- 30.** (c) Cardboard and chopsticks are made from bamboo while measuring cylinder and camera lens are prepared from glass.
- 31.** (c) A plastic file is hard, strong and unbreakable as compared to the other three.
- 32.** (b) The handle of an electric iron is made of plastic while the body is made of metal.

- 33.** (c) Opaque objects form shadows when placed in the path of light.
- 34.** (d) A flexible rod can be bent easily.
- 35.** (d) Bag 'X', being stronger, could hold the weight of all the items.
- 36.** (a) Ink and water mix with each other completely and are said to be miscible.
- 37.** (b) All soft objects can be torn easily.
- 38.** (c) A shawl is made up of wool only.
- 39.** (c) The objects given in column (P) are non- magnetic. Iron rod and steel spoon in column (Q) are magnetic.
- 40.** (a) The ruler, sharpener, eraser, pencil and water colours are all stationary items.
- 41.** (b) Glass is a bad conductor of heat. When a drop of water falls on a glowing electric bulb, it bursts due to uneven cooling.
- 42.** (c) Iron ruler is a metal and is a good conductor of heat.
- 43.** (d) Iron, nickel and cobalt are magnetic in nature while chalk is non-magnetic.
- 44.** (b) Oil floats on water. Hence, it has less density than water. So, for equal volumes of oil and water, water weighs more than oil.
- 45.** (b) Both solids and liquids have relatively less intermolecular forces of attraction. Hence, they cannot be distinguished by the property of compressibility.
- 46.** (b) Salt is soluble in water.
- 47.** (b) The level in the 2nd beaker is the sum of the volumes of oil and water (as oil and water are immiscible). Secondly, oil floats on water as oil is lighter than water.
- 48.** (a) Overhead cables need not be insulated because air is a bad conductor of electricity.

- 49.** (a) A key is denser than water.
- 50.** (d) All the given properties are correct of copper.
- 51.** (d) Fish tank is fragile, it allows light to pass through it and is made up of glass.
- 52.** (b) Water, being a good solvent, dissolves the dirt and other substances present in our clothes and removes them.
- 53.** (c) In solids, the component particles are very close and rigid. Hence, solids cannot be compressed.
- 54.** (c) 'X' is carbon dioxide gas, 'Y' is rock and 'Z' is syrup.