CHAPTER-1

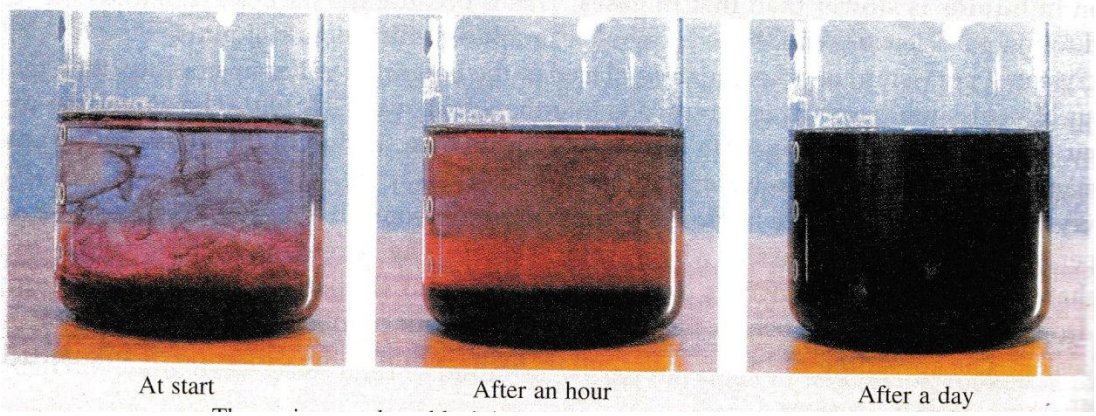
MATTER IN OUR SURROUNDING

QUESTIONS BANK

SUB TOPIC-MATTER AND IRS INTERCONVERSION

VERY SHORT TYPE:

1. What are the conditions for 'something' to be called 'matter'?
2. Which single term is used to describe the mixing of copper sulphate and water kept in a beaker, on its own?
3. When sugar is dissolved in water, there is no increase in the volume. Which characteristic of matter is illustrated by this observation?
4. When an incense stick (agarbatti) is lighted in one corner of a room, its fragrance spreads in the whole room quickly. Which characteristic of the particles of matter is illustrated by this observation?
5. Name the process by which a drop of ink spreads in a beaker of water.



These pictures show black ink diffusing through a beaker of water.

6. What is the general name of?

a. Rigid form of matter?

b. Fluid forms of matter?

7. A substance has a definite volume but no definite shape'. State whether this substance is a solid, a liquid or a gas.
8. A substance has neither a fixed shape nor a fixed volume. State whether it is a solid, a liquid or a gas.
9. State whether the following statement is true or false:

Red-brown bromine vapour diffuses into air in a gas jar but the colourless air molecules do not diffuse into bromine vapour.

10. A bottle of perfume was opened in a room. The smell of its vapours spread in the

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entire room. Name the property of gases which is responsible for this behavior of perfume vapours

11. Fill in the following blanks with suitable words:

a. The best evidence that the particles of matter are constantly moving comes from the studies of ..... and.....

b. At room temperature, the forces of attraction between the particles of solid substances are ..... those which exist in the gaseous state.

c. The arrangement of particles is less ordered in the..... state. However, there is no order in the..... state.

12. The Kelvin temperature is 270 K. What is the corresponding Celsius scale temperature?

13. Convert the temperature of 573 K to the Celsius scale.

14. Give the usual name for the following:

The heat required to change the state of a substance without changing the temperature.

15. Write the relation between Kelvin scale and Celsius scale of temperature.

16. What is meant by saying that the latent heat of vaporization of water is 22.5×10^5 J / Kg?

17. Name the temperature at which

(a) A liquid change into a gas (b) A solid changes into a liquid.

18. Name one property which is shown by ammonium chloride but not by sodium chloride.

19. What is the common name of solid carbon dioxide?

20. What is the chemical name of dry ice?

21. Fill in the following blanks with suitable words:

a. When steam condenses to form water, heat is.....

b. Temp on Kelvin scale = Temp on Celsius scale +.....

c. The state of matter called..... makes a fluorescent tube (or neon sign bulb) to glow

Multiple Choice Questions (MCQs)

22. Which one of the following lines is correct in respect of fluids?

a. only gases behave as fluids

b. gases and solids behave as fluids

c. gases and liquids behave as fluids

d. only liquids are fluids

23. A few substances are arranged in the increasing order of 'forces of attraction' between their particles. Which one of the following represents the correct arrangement?

(a) Water, air, wind (b) air, sugar, oil

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(c) Oxygen, water, sugar (d) salt, juice, air

24. Out of the following, an example of matter which can be termed as fluid is:

(a) Carbon (b) Sulphur (c) oxygen (d) phosphorus

25. The best evidence for the existence and movement of particles in liquids was provided by:

(a) John Dalton (b) Ernest Rutherford (c) J.J. Thomson (d) Robert Brown

26. A form of matter has no fixed shape but it has a fixed volume. An example of this form of matter is:

(a) Krypton (b) kerosene (c) carbon steel (d) carbon dioxide

27. Which one of the following statements is not true?

a. The molecules in a solid vibrate about a fixed position
b. The molecules in a liquid are arranged in a regular pattern.
c. The molecules in a gas exert negligibly small forces on each other, except during collisions.
d. The molecules of a gas occupy all the space available.

SUB TOPIC- Characteristics properties of Matter

SHORT TYPE:

28. State two characteristics of matter demonstrated by:

a. Diffusion.
b. Brownian motion.

29. When a crystal or potassium permanganate is placed in a beaker, its purple colour spreads throughout the water. What does this observation tell us about the nature of potassium permanganate and water?

30. Explain why, we can easily move our hand in air but to do the same through a plank of wood, we need a karate expert.

31. Give one example of the diffusion of a solid in another solid.

32. State two characteristic properties each of:

(a) A solid (b) a liquid (c) a gas

33. Give two reasons to justify that:

a. Water is a liquid at room temperature.
b. An iron almirah is a solid.

34. (a) What does the diffusion of gases tell us about their particles?

(b) Give one example of diffusion of gases in a liquid.

35. Give reason for the following observation:

The smell of hot sizzling food reaches us even from a considerable distance but to get the smell from cold food, we have to go close to it.

36. When a crystal of copper sulphate is placed at the bottom of a beaker containing

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water, the water slowly turns blue. Why?

37. Explain why:

a. Air is used to inflate tyer.

b. Steel is used to make railway lines.

38. Explain why, diffusion occurs more quickly in a gas than in a liquid.

39. What do you understand by the term 'latent heat'? What are the two types of latent heat?

40. Why does the temperature remain constant during the melting of ice even though heat is supplied continuously?

41. Explain why, ice at 0^0C is more effective in cooling than water at the same temperature.

42. Why does steam cause more severe burns than boiling water?

43. Explain why, steam at 100^0C is better for heating purposes than boiling water at 100^0C.

44. What is the physical state of water?

(a) at 0^0 C? (b) at 25^0C? (c) at 100^0C? (d) at 250^0C?

45. Define 'melting point' of a substance? What is the melting point of ice?

46. Define 'boiling point' of a substance? What is the boiling point of water?

47. How does applying pressure (or compression) help in the liquefaction of a gas?

48. Why does all the water of the earth not get evaporated during hot summer days?

49. Why does a desert cooler cool better on a hot, dry day?

50. Why are we able to sip hot tea or milk faster from a saucer rather than from a cup?

Analytical Questions (HOTS)

51.) What is meant by 'diffusion'? Give one example of diffusion in gases.

(b) Why do gases diffuse very fast?

(c) Name two gases of air which dissolve in water by diffusion. What is the importance of this process in nature?

52. (a) Why does a gas exert pressure?

(b) Why does a gas fill a vessel completely?

(c) Why are gases so easily compressible whereas it is almost impossible to compress a solid or a liquid?

53. (a) Define matter. Give four examples of matter?

(b) What are the characteristics of matter?

54. (a) What is Brownian motion? Draw a diagram to show the movement of a particle (like a pollen grain) during Brownian motion.

(b) In a beam of sunlight entering a room, we can sometimes see dust particles moving

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in a haphazard way in the air. Why do these dust particles move?

55. Why is ice at 273 K more effective in cooling than water at the same temperature?

56. (a) Define the term 'latent heat of fusion' of a solid. How much is the latent heat of fusion of ice?

(b) Draw a labeled diagram of the experimental set-up to study the latent heat of fusion of ice.

57. (a) What is sublimation? Name two substances (other than ammonium chloride) which undergo sublimation.

(b) Draw a labeled diagram of the experimental set-up to demonstrate the sublimation of ammonium chloride.

58. (a) What is evaporation? State the various factors which affect evaporation.

(b) Why does evaporation cool a liquid?

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