Question 1 Choose the correct answer from the following options:

1. The ability of the material to flow and not take a fixed shape is one of the properties of

- ☐ Solid and liquid materials
- ☐ Solid and gaseous materials
- ☐ Liquid and gaseous materials
- ☐ Solid, liquid and gaseous materials

2. Units of measurement of density

- ☐ N.m-3
- ☐ g.mm-1
- ☐ Kg cm-1
- ☐ g.l -1

3. In the opposite figure, two solid cylinders of the same metal and have the same diameter, one of them is longer than the other at the same temperature, so the equal quantity for the two cylinders is

- ☐ Mass
- ☐ Weight
- ☐ Density
- ☐ Volume

4. In an experiment to measure the extent of pollution in swimming pool water, two samples B, A were taken at the same time from the swimming pool, their volumes are 40 cm3, 10 cm3 respectively, so it is expected that the ratio of the density of water in sample B to The density of water in sample A is equal to

- ☐1/1
- ☐2/1
- ☐4/1
- ☐The answer cannot be determined

5. If you know that the relative density of mercury is greater than the relative density of alcohol at the same temperature, then the ratio of the mass of 1 cm3 of mercury to the mass of the same volume of alcohol is

□Greater than one

□Less than one

□Equal to one

□The answer cannot be determined

6. The density of pure water reaches its maximum value at

□0°C

□4°C

□100°C

□104°C

7. The density of pure water in international units at 4°C is equal to

□1000g/m^3

□1g/cm^3

□1000kg/cm^3

□1000kg/m^3

8. What happens to the molecules of pure water when its temperature decreases from 4°C to 0°C

□Approach each other

□Move away from each other

□Remain constant from its position

□Its volume decreases

9. A quantity of pure water has a volume of 20 cm3 at a temperature of 4°C. What is its mass?

□10g

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10. If the volume of 1 kg of pure water at a temperature of 4°C is V1 and the volume of 1 kg of pure water at a temperature of 2°C is V2, then the ratio (V1/V2) is

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11. . A- Its volume at 4°C is

□100 cm^3

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B- Its volume at 20°C is

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A- The cubic meter of pure water has the largest mass

□4°C

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B- The kilogram of pure water has the largest volume

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12. A quantity of pure water with a volume of 1m^3 at a temperature of 4°C is cooled until it freezes, then the amount of increase in the volume of this quantity when it turns into ice with a density of 917kg/m^3 is approximately equal to

□0.03m^3

□0.04m3

□0.06m^3

□0.09m^3

13. Two samples of pure water and water with dissolved pollutants can be distinguished at the same temperature by measuring

□The mass of each

□The volume of each

□The weight of each

□The density of each

14. Which of the following factors does not directly affect ocean currents?

□The difference in the degree of salinity of water

□The difference in the temperature of water

□The difference in the types of marine organisms

□The difference in water pressure

Question 2 Write the scientific term in the following phrases

1) Any substance that can flow and does not take a fixed shape but takes the shape of the container containing it. .....
2) The mass of a unit volume of the substance .....
3) The ratio of the density of a certain substance to the density of pure water at the same temperature .....

Question 3 Complete the following

1) ..... is used to predict the presence of dissolved pollutants in water by Density measurement method
2) Water has unique physical properties that distinguish it from other liquid fluids, including a ... when the temperature and ..... are lowered from 4°C to 0°C
3) The hydrometer is used to measure ..... and .....
4) When the temperature of pure water increases, the distances between the molecules ...., so the volume increases and the density of water .....
5) In liquids with ..... density, a larger part of the hydrometer is submerged

Question 4

1- Mention the factors on which the density of the substance depends

2- Water currents in the oceans are the movement of water from one area to another and carry with it

Question 5 Explain the following:

The density of the pure substance changes with the change in the mass or volume of the sample taken from it

1) Density has a unit of measurement, while relative density does not have a unit of measurement.

2) The presence of mercury in the hydrometer's inflation.

Question 6 What happens in the following cases:

i. When the temperature of pure water rises from 4°C to 10°C relative to its density.

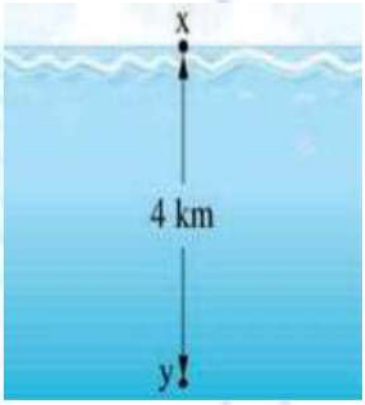
ii. When the pressure to which the water is exposed increases with increasing depth.

Question 7

Mention the factors that affect the density of water in the oceans and explain the effect of each.

Question 8

In the opposite figure, explain why the density of water at point Y is greater than its density at point X.



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□The difference in water pressure

Question 2 Write the scientific term in the following phrases

4) Any substance that can flow and does not take a fixed shape but takes the shape of the container containing it. the fluid

5) The mass of a unit volume of the substance .density

6) The ratio of the density of a certain substance to the density of pure water at the same temperature .relative density

Question 3 Complete the following

6) The hydrometer is used to predict the presence of dissolved pollutants in water by Density measurement method

7) Water has unique physical properties that distinguish it from other liquid fluids, including a decrease in its density when the temperature and specific heat are lowered from 4°C to 0°C

8) The hydrometer is used to measure the density of liquids and the relative density of liquids

9) When the temperature of pure water increases, the distances between the molecules increase, so the volume increases and the density of water decreases

10) In liquids with low density, a larger part of the hydrometer is submerged

Question 4

3- Mention the factors on which the density of the substance depends

- Mass of molecules
- Distances between molecules
- Degree of purity of the substance
- Temperature

4- Water currents in the oceans are the movement of water from one area to another and carry with it

- Heat and salt
- Nutrients
- Fresh water

Question 5 Explain the following:

The density of the pure substance changes with the change in the mass or volume of the sample taken from it

Because the density of the substance Pure has a distinctive physical property, so its value is constant when the pressure and temperature are constant.

3) Density has a unit of measurement, while relative density does not have a unit of measurement.

Because density is the ratio between two quantities with a different unit of measurement, while relative density is the ratio between two quantities with the same unit of measurement.

4) The presence of mercury in the hydrometer's inflation.

To help the device balance vertically in liquids.

Question 6 What happens in the following cases:

i. When the temperature of pure water rises from 4°C to 10°C relative to its density.

The distances between the molecules increase, so the volume of the liquid increases with the constancy of its mass and its density decreases.

ii. When the pressure to which the water is exposed increases with increasing depth.

The water molecules come closer together, its volume decreases, and its density increases

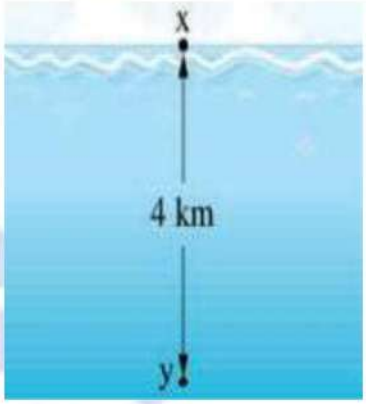
Question 7

Mention the factors that affect the density of water in the oceans and explain the effect of each.

1. **Water pressure: The pressure to which the water is exposed increases with increasing depth, as the water molecules come closer together and decrease.**
2. **Water temperature: When the water temperature decreases until it reaches 4°C, it decreases. The distances between the molecules decrease, which leads to an increase in the density of water from 4°C to 0°C, as the distances between them increase, so the density of water decreases.**
3. **Water salinity: Salinity expresses the amount of salt dissolved in the water, as the normal rate of salinity of ocean water is 359/l.**

Question 8

In the opposite figure, explain why the density of water at point Y is greater than its density at point X.



Because as the temperature of the water decreases until it reaches 4°C, the distances between the molecules decrease, so the volume decreases, which leads to an increase in the density of water (y).

From 4°C to 0°C, the distances between the molecules increase, so the volume increases and its density decreases (x)