

## Chemistry Practical Class 9 Preparation of a Suspension of Soil, Chalk Powder and Fine Sand in Water Viva Questions with Answers

**Q1:** What is Suspension?

**Answer:**

Suspension is a heterogeneous mixture in which solute particles do not dissolve but remain suspended; particles can be seen with the naked eye; it scatters a beam of light, and particles can be filtered out of the mixture.

**Q2:** How to prepare a suspension of soil, chalk powder and fine sand in water?

**Answer:**

**Suspension of soil in water:**

In a beaker, mix 100 mL distilled water and 10 g of garden soil. A glass rod was used to stir the liquid. Allow it to rest for a while and then make a note of your findings. (In water, the soil does not dissolve but rather creates a suspension.)

**Suspension of chalk powder in water:**

In a beaker, combine 100 mL distilled water and 10 g chalk powder. Stir thoroughly and make a note of your findings. (A suspension is formed when chalk and water are combined.)

**Suspension of fine sand in water:**

In a beaker, mix 100 mL distilled water and 10 g fine sand. Using a glass rod, thoroughly mix the ingredients. Allow it to rest for a while before recording your findings. (It is not soluble in water.)

**Q3:** Why is water called a universal solvent?

**Answer:**

Water is referred to as a universal solvent since it dissolves the largest variety of compounds.

**Q4:** Why are the particles of a true solution not visible to naked eye?

**Answer:**

True solution particles are too tiny to be visible with the naked eye.

**Q5:** What types of separation techniques can be employed to separate components of homogeneous and heterogeneous mixtures?

**Answer:**

Evaporation, distillation, and fractional distillation can all be used to separate a homogeneous mixture.

Filtration, centrifugation, sedimentation, and decantation can all be used to separate a heterogeneous mixture.

**Q6:** When a beam of light is transmitted through a true solution and a suspension, what will you observe?

**Answer:**

In the case of a true solution, a beam of light will pass straight through without scattering. The beam of light shined on the suspension will not disperse when it is settled, but if it is not settled, the beam of light will scatter and the path of light will become visible.

**Q7:** What is the difference between a colloid, a true solution, and a suspension in terms of particle size?

**Answer:**

True solution particles are less than 1 nm in size, colloidal particles are between 1 nm and 1000 nm in size, and suspension particles are more than 1000 nm.

**Q8:** How will you separate a mixture of sand chalk powder and water?

**Answer:**

Filtration and Evaporation Method:

- Dissolve the sand and chalk powder combination in water.
- Filter the mixture.
- The sand is accumulated in the filter paper as a residue.
- Evaporate the filtrate to get the chalk powder.

**Q9:** Mention the precautions to be taken during the experiment.

**Answer:**

(i) Take care with the materials and solutions.

- (ii) Drop the contents of a solution into a beaker while filtering it through a glass rod.  
(iii) Keep the sample unaffected while checking stability.

**Q10:** What separation technique is used to separate sand and water?

**Answer:**

Filtration is a process for separating a mixture of sand and water that is used in the research of mixtures and compounds.

**Q11:** What is the order of particle size that can be observed with the naked eye?

**Answer:**

Particles that may be seen with the naked eye are on the order of 10<sup>-3</sup> mm in size.

**Q12:** How do you measure the pH of a suspension?

**Answer:**

The pH is deduced on a 1:5 soil:deionised water suspension. A pH or millivolt metre calibrated against known buffer solutions is used to monitor the change in potential of a silver/silver chloride combination electrode or a glass electrode/reference electrode system.

**Q13:** What are the properties of suspension?

**Answer:**

- A suspension is a heterogeneous mixture.
- In a suspension, the size of solute particles is quite huge. It has a diameter of at least 100 nm.
- Suspension particles are easily visible.
- A filter paper does not pass the particles of a suspension through.
- The suspension isn't stable in nature. After a period of time, the particles in suspension settle down.
- Because of its huge particle size, a suspension scatters a light beam travelling through it.

**Q14:** Give some examples of suspension.

**Answer:**

- Muddy water
- Milk of magnesia
- Flour in water

- Sand particles suspended in water
- Slaked lime for whitewashing
- Paints in which dyes are suspended in turpentine oil.

**Q15:** What is the difference of suspension and colloid?

**Answer:**

Filtration can separate suspension particles from colloid particles. Light can be scattered by colloids, but not through suspensions. Particles in a suspension can be seen with the naked eye, but in a colloid, a light microscope is required.

