EXPERIMENT NO: 2

NAME OF EXPERIMENT: TO OBTAIN SAND IN PURE AND DRY STATE FROM THE MIXTURE OF SAND AND COMMON SALT

APPARATUS REQUIRED

1. Funnel
2. Beaker
3. Glass rod
4. Stand
5. Test tubes
6. Filter paper

CHEMICAL REQUIRED

1. Silver nitrate solution ($AgNO_3$)
2. Mixture of sand and common salt

THEORY

The soluble and insoluble components of mixture can be separated by dissolving the mixture in water followed by filtration.

Filtration can be defined as the method of separating the insoluble component and solution of soluble component by means of porous medium like filter paper. The insoluble component i.e. sand obtained on filter paper is called residue and solution of soluble component i.e. salt which passes through filter paper and is collected in beaker is called filtrate.

The purity of sand can be checked by treating sand washed water with few drops of silver

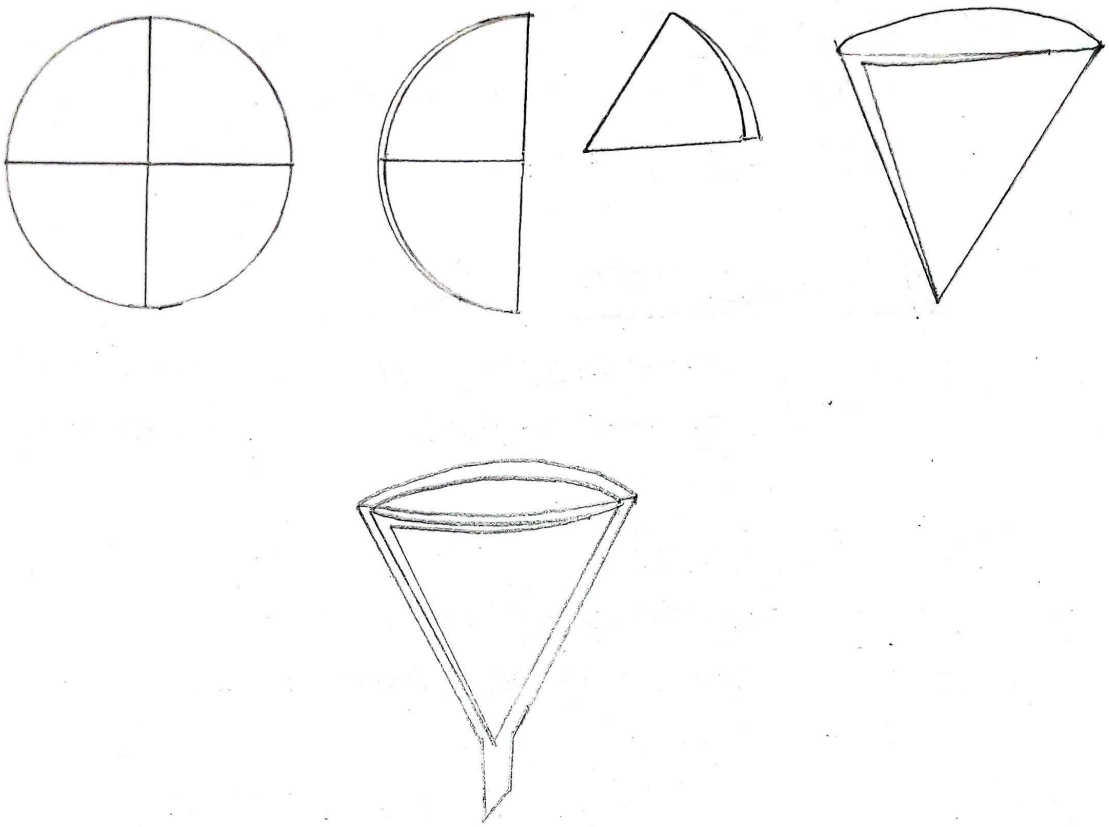

Fig. (a) Folding of filter paper

nitrate solution. Presence of common salt in sand is indicated by formation of a curdy white precipitate.

$$NaCl(aq) + AgNO_3(aq.) \longrightarrow AgCl\downarrow(s) + NaNO_3(aq.)$$
(curdy white ppt)

PROCESS

1. The mixture of sand and common salt was taken in a beaker and a little amount of water was added to the beaker. The mixture was stirred with a glass rod to dissolve the common salt.
2. The mixture of solution was warmed gently.
3. The sand was allowed to settle down. Then the supernatent clear liquid was decently offed. The water was added and the process was repeated 3-4 times.
4. The filter paper was folded as shown in the figure and fitted into the funnel.
5. By means of glass rod, the supernatent liquid was transferred into the funnel.
6. Few drops of the filtrate were taken in a test tube directly from the stem of the funnel. Then a few drops of silver nitrate solution were added to the test tube. The presence of common salt in the sand was indicated by the formation of curdy white precipitate.
7. The process process was continued until a curdy white precipitate was absent.
8. All the sand was transferred to the filter paper.

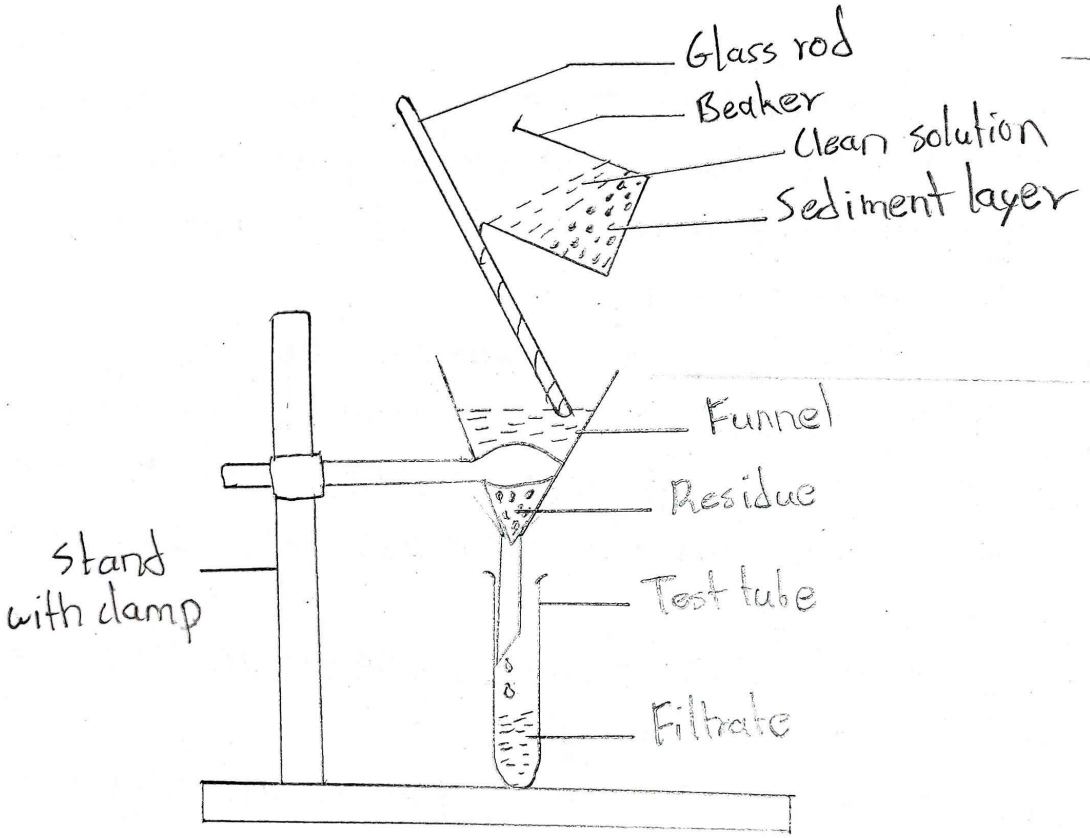

Fig (b) Filtration

9. The filter paper was removed carefully from the funnel.
10. The sand was dried over the bunsen burner.

OBSERVATIONS

	Experiment	Observation	Inference
1.	Few drops of sand-washed water was treated with few drops of $AgNO_3$ solution.	A curdy white ppt. was observed.	Presence of common salt in sand.
2.	After washing the sand again, few drops of sand-washed water was treated with $AgNO_3$ solution	No any precipitation was observed.	Absence of common salt in sand.

PRECAUTIONS:

1. While filtering, the solution should not come up to the rim of the filter paper.
2. The stem of funnel should touch the inner wall of the beaker.
3. While drying the sand, care should be taken so that the filter paper does not burn.
4. Filtration should be done using a glass rod.
5. All the glasswares should be handled with care.

RESULT

Sand was obtained in pure and dry state from their mixture by dissolving the mixture in water followed by filtration, washing and drying.