1. Which separation technique will you apply for the separation of the following?

a) Sodium Chloride from its solution in water

Ans.a It can be separated either through evaporation or distillation, The boiling point of water is 1000C and the boiling point of sodium chloride is 1413^0C. Due to heating the state of water changes from liquid to gas however sodium chloride remains unaffected.

b) Ammonium Chloride from a mixture containing sodium chloride and ammonium chloride

Ans b. This can be done through sublimation. Ammonium Chloride is volatile and on heating changes into vapor while sodium chloride is non volatile and heating has no effect on it.

c) Small pieces of metal in the engine oil of a car

Ans.c This can be done through filtration as insoluble metal pieces are trapped as residue and the oil passes as filtrate

d) Different pigments from an extract of flower petals

Ans d. Through the process of chromatography. The flower extracts are kept on the chromatograph and a solvent such as ethanol. The lighter pigments move up with the solvent and the heavier pigments settle down.

e) Butter from curd

Ans d. Through the process of centrifugation or churning. Curd is rotated creating centrifugal force. The denser liquid buttermilk settles down and the lighter butter floats on top.

f) Tea leaves from tea

Ans f. Through strainer or mesh through which the liquid tea passes and the solid tea leaves are left behind.

g) Iron pins from sand

Ans g. Through magnetic separation. The iron pins would stick to the magnet and the sand would be left behind.

h) Wheat grains from husk

Ans g. Through winnowing. Wheat is heavier and falls down. The husk is light and is blown away by the air current.

i) Fine mud particles suspended in water

Ans i. Through combination of sedimentation, decantation and filtration.