

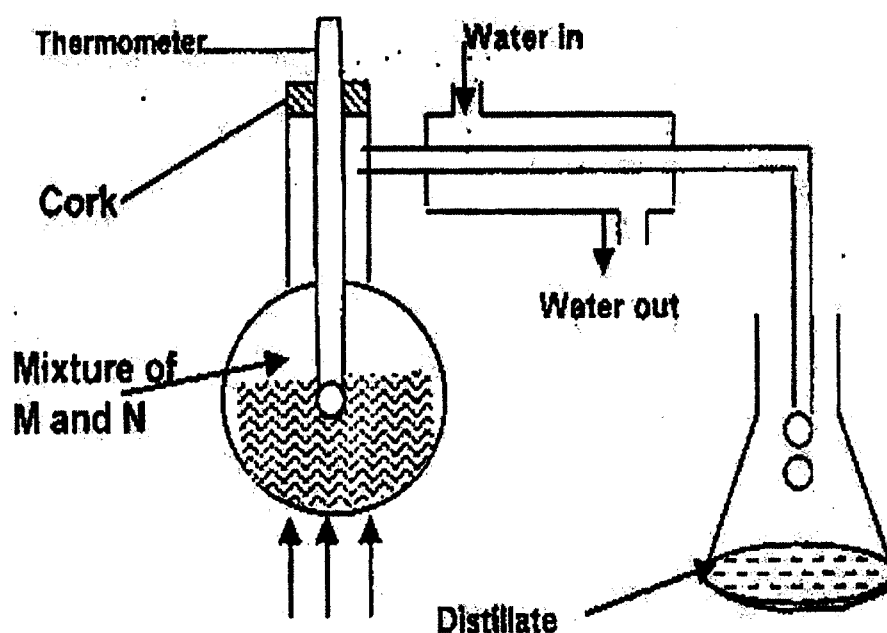
FORM ONE CHEM AUGUST HOLIDAY ASSIGNMENT

1. Study the information below and answer the question that follows. A mixture contains the solids; Alum camphor and sugar. The solubility of different liquids is shown in the table below.

	Liquid		
solid	Water	Ethanol	Ether
Alum	Soluble	Insoluble	Insoluble
Camphor	Insoluble	Soluble	Very soluble
Sugar	Soluble	Soluble	Insoluble

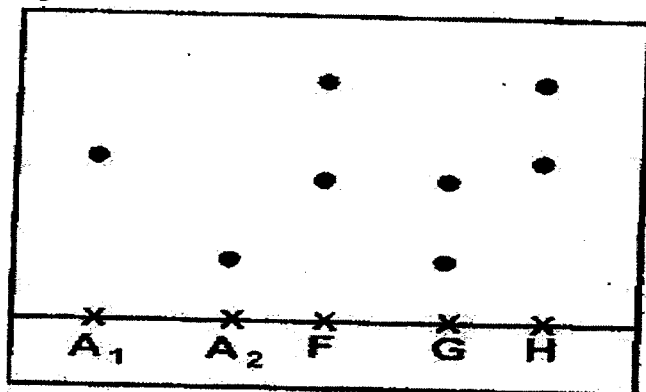
Explain how you would obtain a sample of solid sugar from the mixture.

2. In an experiment to separate a mixture of organic liquid "m" (B.P. 56°C) and liquid "n" (B.P. 118°C) a student set up the apparatus shown below.



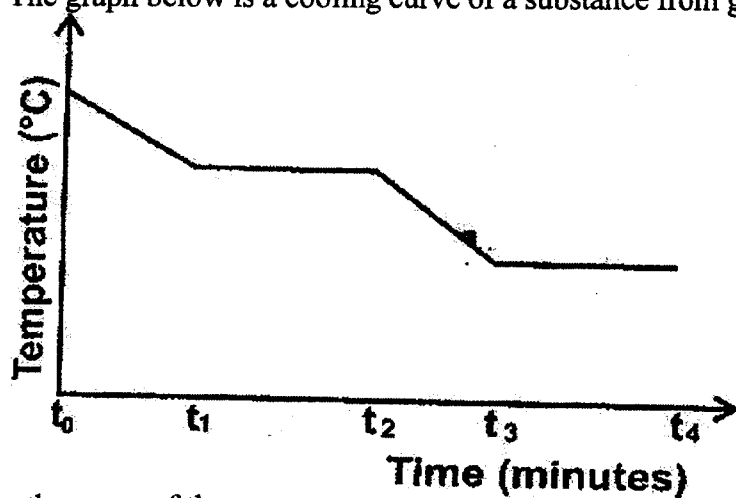
- a) Identify two mistakes in the set up. (2mks)
- b) What method would the student use to test the purity of the distillates? (1mk)
3. Some sodium Chloride(soluble substance) was found to be contaminated with Copper (II) Oxide (insoluble substance). Describe how a sample of sodium chloride can be separated from the mixture. (3mks)

4. Samples of urine from three participants F, G and H at an international sports meeting were spotted onto a chromatography paper alongside two from illegal drugs A₁ and A₂. A chromatogram was run using methanol. The figure below shows the chromatogram.



- a) Identify the athlete who had used an illegal drug. (1mk)
 b) Which drug is more soluble in methanol? (1mk)

5. The graph below is a cooling curve of a substance from gaseous state to solid state.



Give the name of the:

- a) Process taking place between t_0 and t_1 ; (1mk)
 b) Energy change that occurs between t_3 and t_4 (1mk)
6. Solutions may be classified as strong basic, weakly acidic, strong acidic. The information below gives solutions and their PH values. Study it and answer the questions that follow.

Solutions	PH values
B	1.5
C	6

Classify the solutions in the table above using the stated classification (3mks)

6. The table below shows the PH values of certain solutions

Solution	A	B	C	D
PH values	8	5	7	11

Which of the solutions is most likely to be solutions of

- i) Common salt (1mk)
- ii) Lime water (1mk)
- iii) Orange juice (1mk)
- iv) Household soap (1mk)

7. Giving two examples in each case, give the meaning of the following terms

- (a) Temporary physical change (3mks)
- (b) Permanent chemical change (3mks)

8. Give four differences between temporary physical change and permanent chemical change.

9. Write word equations for the following reactions

(a) Reaction between sulphuric acid and

- (i) Zinc metal
- (ii) Magnesium oxide
- (iii) Copper(II)carbonate
- (iv) Sodium hydroxide
- (v) Potassium hydrogen carbonate

(b) Reaction involving

- (i) Heating copper (II) nitrate crystals
- (ii) Heating hydrated copper (II) sulphate crystals
- (iii) Heating zinc oxide solid
- (iv) Heating candle wax
- (v) Heating iodine crystals
- (vi) Heating potassium manganite crystals

10. Which of the reactions in 9 (b) above that

- (a) No new substance(s) is formed
- (b) New substance(s) is formed