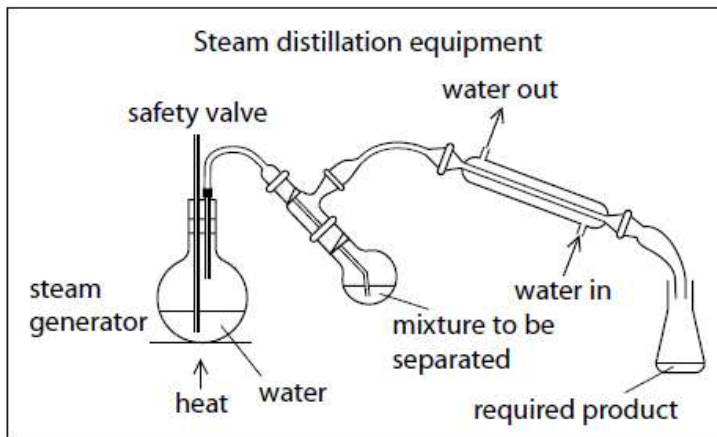


Organic Synthesis - Questions by Topic

Q1.

Steam distillation is a technique used during some organic preparations to separate the product from the reaction mixture.



What benefit is gained from the use of steam distillation compared to other methods of distillation?

(1)

- A** a pure distillate is produced
- B** high distillation temperatures are required
- C** it works well for molecules miscible with water
- D** it avoids the decomposition of the organic molecule when it distils

(Total for question = 1 mark)

Q2.

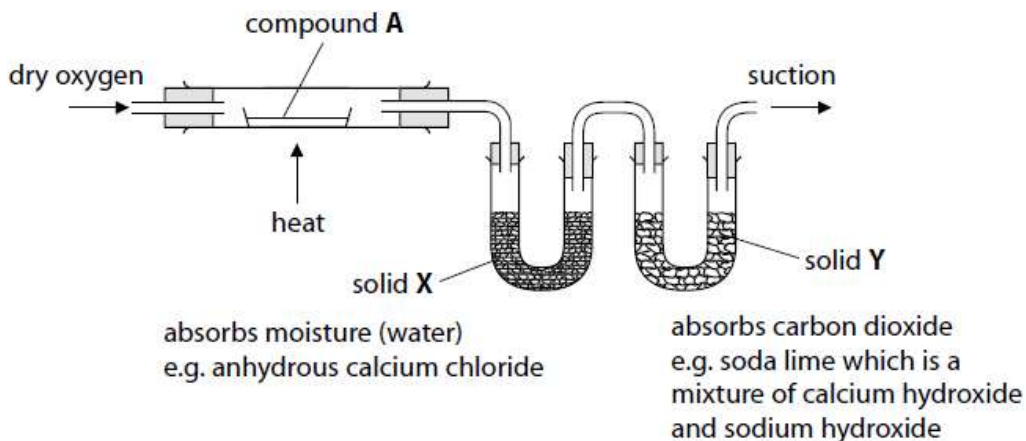
Butan-2-ol is a secondary alcohol with four carbon atoms.

(a) Devise a reaction scheme to form butan-2-ol from iodoethane, C_2H_5I , as the only organic compound.

Give reagents, conditions and equations for each of the steps.

(8)

(b) A 1.850 g sample of an organic substance, compound A, that is thought to be butan-2-ol is tested by combustion analysis using the apparatus shown.



(i) Calculate the mass increase of solid X and solid Y that would result if compound A is butan-2-ol.

(4)

(ii) Predict a substance which would give the same mass increase in solids X and Y from combustion analysis as butan-2-ol.

Give a reason for your prediction.

(2)

.....

.....

.....

.....

(Total for question = 14 marks)

Q3.

What is the number of peaks in a ^{13}C NMR spectrum of 1,4-dimethylbenzene?



(1)

- A 3
- B 4
- C 7
- D 8

(Total for question = 1 mark)