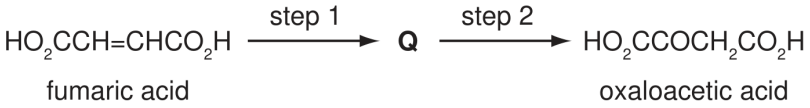
Unit 13: An introduction to AS Level organic chemistry

Subunit 13.2: Characteristic organic reactions

Topical Question No: 1

19 Fumaric acid can be converted into oxaloacetic acid by a two-step process involving the intermediate **Q**.



Each of these steps can be achieved in the laboratory by a single reagent.

What could be the intermediate **Q** and the reagent for step 2?

	Q	reagent for step 2
A	$HO_2CCHBrCH_2CO_2H$	warm acidified $KMnO_4$
B	$HO_2CCHBrCH(OH)CO_2H$	warm NaOH(aq)
C	$HO_2CCH(OH)CH_2CO_2H$	Fehling's solution
D	$HO_2CCH(OH)CH_2CO_2H$	warm acidified $K_2Cr_2O_7$

Topical Question No: 2

26 Which compound, on reaction with hydrogen cyanide, produces a compound with a chiral centre?

A CH_3CHO

B $CH_3CH_2COCH_2CH_3$

C $CH_3CO_2CH_3$

D HCHO

Topical Question No: 3

23 Chloroethane can be used to make sodium propanoate.

chloroethane $\rightarrow$ Q $\rightarrow$ sodium propanoate

The intermediate, Q, is hydrolysed with boiling aqueous sodium hydroxide, to give sodium propanoate.

Which reagent would produce the intermediate, Q, from chloroethane?

A concentrated ammonia solution

B dilute sulfuric acid

C hydrogen cyanide

D potassium cyanide

Topical Question No: 4

21 What is true of every nucleophile?

A It attacks a double bond.

B It has a lone pair of electrons.

C It is a single atom.

D It is negatively charged.

Answer Key

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2. Error
3. Error
4. Error