

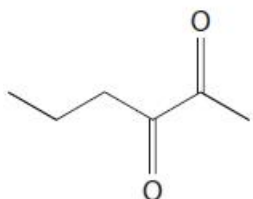
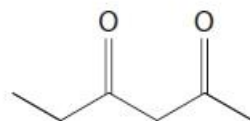
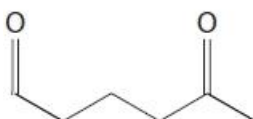
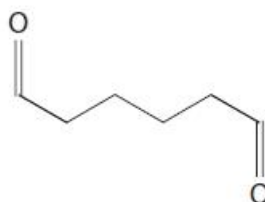
**Questions**

Q1.

Aldehydes and ketones are carbonyl compounds.

Which of these compounds has both an aldehyde functional group **and** a ketone functional group?

(1)

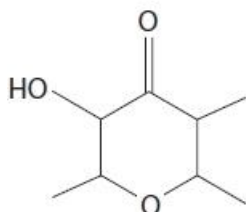
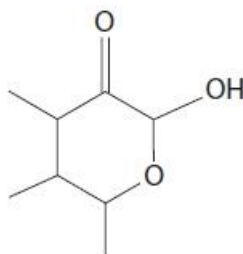
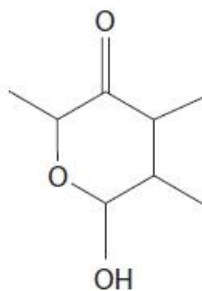
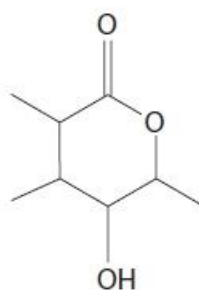
 A B C D**(Total for question = 1 mark)**

Q2.

Aldehydes and ketones are carbonyl compounds.

Which of these compounds does **not** contain a ketone functional group?

(1)

 A B C D

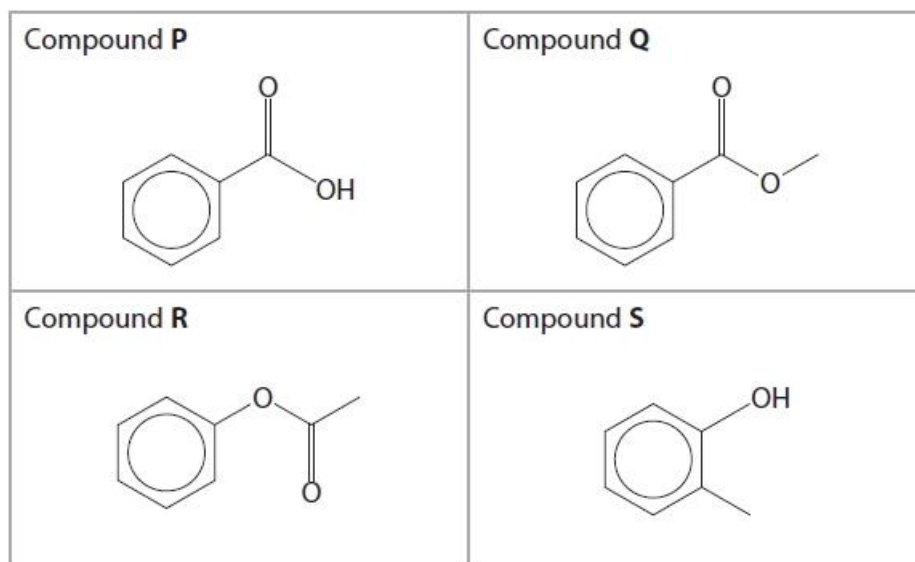
(Total for question = 1 mark)

Q3.

Answer the questions with a cross in the boxes you think are correct . If you change your mind about an answer, put a line through the box  and then mark your new answer with a cross .

This question is about the identification of some organic compounds.

The skeletal formulae of four organic compounds are shown.



(i) Which of these compounds can be hydrolysed to form methanol as one of the products? (1)

- A Compound P  
 B Compound Q  
 C Compound R  
 D Compound S

(ii) Which of these compounds produces carbon dioxide when it reacts with aqueous sodium hydrogencarbonate? (1)

- A Compound P  
 B Compound Q  
 C Compound R  
 D Compound S

(Total for question = 2 marks)

Q4.

Answer the question with a cross in the box you think is correct  . If you change your mind about an answer, put a line through the box  and then mark your new answer with a cross  .

This question is about a dicarboxylic acid **Y** which is present in some citrus fruits. **Y** contains only the elements carbon, hydrogen and oxygen.

Which of these is used to convert a dicarboxylic acid into a diol?

- A** LiAlH<sub>4</sub> and ether
- B** KMnO<sub>4</sub> and H<sub>2</sub>SO<sub>4</sub>
- C** Sn and HCl
- D** Na<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> and H<sub>2</sub>SO<sub>4</sub>

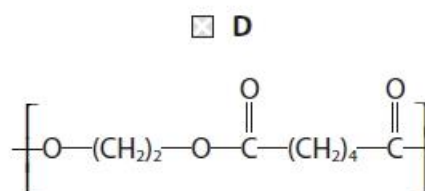
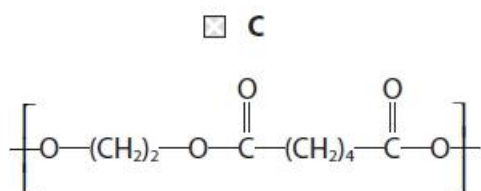
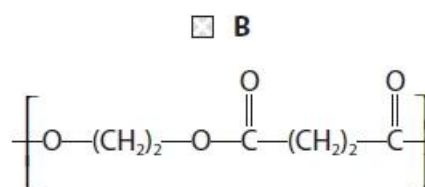
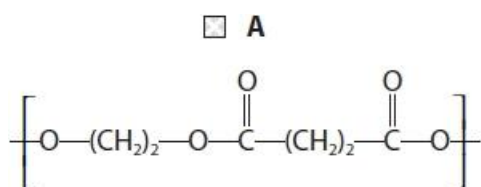
(Total for question = 1 mark)

Q5.

This is a question about polymers.

A condensation polymer can be made from ethane-1,2-diol and butanedioic acid.

Which is the repeat unit for this polymer?




(1)

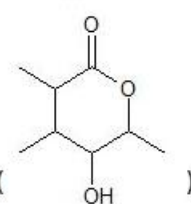
(Total for question = 1 mark)

**Mark Scheme**

Q1.

Question Number	Answer	Mark
	<p>The only correct answer is C (  )</p> <p><i>A is not correct because there are two ketone groups but no aldehyde group</i></p> <p><i>B is not correct because there are two ketone groups but no aldehyde group</i></p> <p><i>D is not correct because there are two aldehyde groups but no ketone group</i></p>	(1)

Q2.

Question Number	Answer	Mark
	<p>The only correct answer is D (  )</p> <p><i>A is not correct because there is a ketone group present</i></p> <p><i>B is not correct because there is a ketone group present</i></p> <p><i>C is not correct because there is a ketone group present</i></p>	(1)

Q3.

Question number	Answer	Mark
(i)	<p>The only correct answer is B (Compound Q)</p> <p><i>A is incorrect because this is not hydrolysed</i></p> <p><i>C is incorrect because this is hydrolysed to form phenol and ethanoic acid</i></p> <p><i>D is incorrect because this is not hydrolysed</i></p>	(1)

Question number	Answer	Mark
(ii)	<p><b>The only correct answer is A</b> (Compound P)</p> <p><b>B</b> is incorrect because it is an ester and does not react with sodium hydrogencarbonate</p> <p><b>C</b> is incorrect because it is an ester and does not react with sodium hydrogencarbonate</p> <p><b>D</b> is incorrect because it is not acidic enough to react with sodium hydrogencarbonate</p>	(1)

Q4.

Question Number	Answer	Mark
	<p><b>The only correct answer is A</b> (LiAlH<sub>4</sub> and ether)</p> <p><b>B</b> is incorrect as acidified KMnO<sub>4</sub> is an oxidising agent</p> <p><b>C</b> is incorrect as Sn/HCl is too mild a reducing agent</p> <p><b>D</b> is incorrect as acidified Na<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> is an oxidising agent</p>	(1)

Q5.

Question Number	Answer	Mark
	<p><b>The only correct answer is B</b> ( <math>\left[ \text{-O-(CH}_2\text{)}_2\text{-O-C(=O)-(CH}_2\text{)}_2\text{-C(=O)-} \right]_n</math> )</p> <p><b>A</b> is not correct because there is an additional oxygen atom in the repeat unit</p> <p><b>C</b> is not correct because there is an incorrect number of CH<sub>2</sub> groups in one of the monomers and there is an additional oxygen atom in the repeat unit</p> <p><b>D</b> is not correct because there is an incorrect number of CH<sub>2</sub> groups in one of the monomers</p>	(1)