

**Questions**

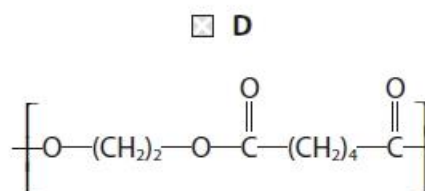
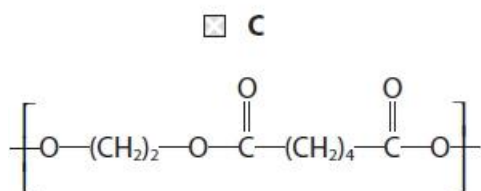
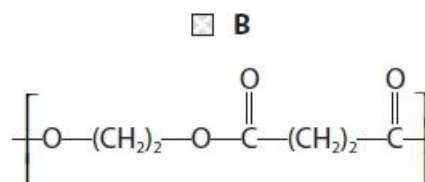
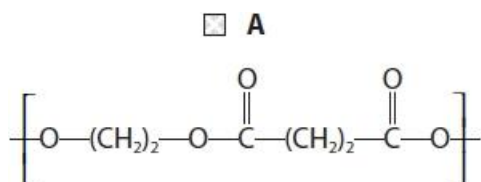
Q1.

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)



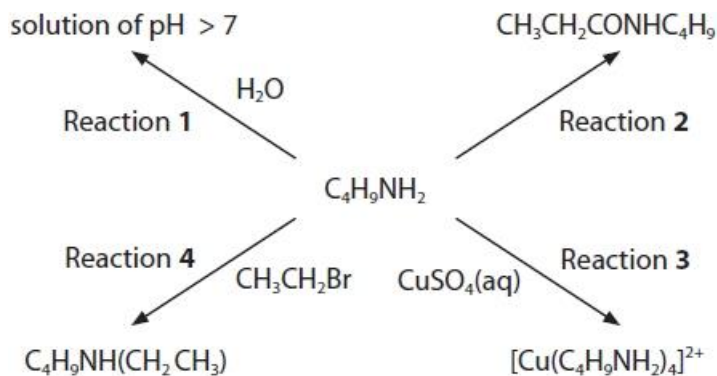
(Total for question = 1 mark)

Q2.

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 the amines butylamine,  $C_4H_9NH_2$ , and phenylamine,  $C_6H_5NH_2$ .

The reaction scheme shows some reactions of butylamine, a primary amine.



What is seen when excess butylamine is used in Reaction 3?

(1)

- A blue solution
- B blue precipitate
- C yellow solution
- D yellow precipitate

(Total for question = 1 mark)

**Mark Scheme**

Q1.

Question Number	Answer	Mark
	<p>The only correct answer is B ( <math>\left[ -O-(CH_2)_2-O-\overset{O}{\parallel}C-(CH_2)_2-\overset{O}{\parallel}C- \right]_n</math> )</p> <p><i>A is not correct because there is an additional oxygen atom in the repeat unit</i></p> <p><i>C 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</i></p> <p><i>D is not correct because there is an incorrect number of CH<sub>2</sub> groups in one of the monomers</i></p>	(1)

Q2.

Question Number	Answer	Mark
	<p>The only correct answer is A (blue solution)</p> <p><i>B is incorrect because the product is not a precipitate</i></p> <p><i>C is incorrect because the product is not yellow</i></p> <p><i>D is incorrect because the product is neither yellow nor a precipitate</i></p>	(1)