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CAIE A LEVEL Chemistry Topic Questions / 9701

1.3.4-Shapes-of-s-and-p-Orbitals-set-2-3-q p

Total Questions: 3

Note:

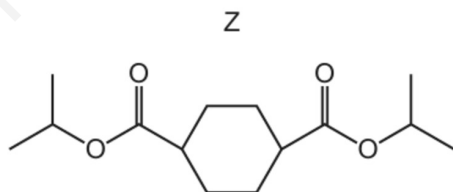
- For questions with answer choices as statements 1, 2 and 3, follow these instructions for selecting options A/B/C/D:
- A= 1, 2 and 3 are correct
- B=1 and 2 only are correct
- C=2 and 3 only are correct
- D=1 only is correct

Questions

Question 1:

An alcohol, X, reacts with a dicarboxylic acid, Y, to form a double ester, Z.

The diagram shows the structure of the ester.



Which row about the reactants forming ester Z is correct?

	the class of alcohol X	the shape of the ring in Y
A	secondary	non-planar
B	secondary	planar
C	tertiary	non-planar
D	tertiary	planar

Question 2:

Which element has an equal number of electron pairs and of unpaired electrons within orbitals of principal quantum number 2?

- A beryllium
- B carbon
- C nitrogen
- D oxygen

Questions (Continued)

Question 3:

The table refers to the electron distribution in the second shell of an atom with eight protons.

Which row is correct for this atom?

	orbital shape 		orbital shape 	
	orbital type	number of electrons	orbital type	number of electrons
A	p	2	s	4
B	p	4	s	2
C	s	2	p	4
D	s	4	p	2