

## Synthesis

1. A solid organic compound can be purified by recrystallisation.

Which statement(s) about recrystallisation is/are true?

- 1 The organic compound is more soluble in hot solvent.
- 2 The hot solution is cooled before the purified organic compound is collected.
- 3 The melting point of the purified organic compound is lower than the impure compound.

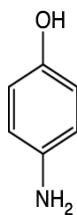
- A** 1, 2 and 3  
**B** Only 1 and 2  
**C** Only 2 and 3  
**D** Only 1

Your answer

☐

[1]

2. The compound shown below can be prepared from phenol.



Which reagent(s) is/are required?

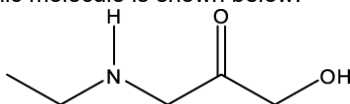
- A** Concentrated NH<sub>3</sub>  
**B** Dilute NH<sub>3</sub>  
**C** Dilute HNO<sub>3</sub> and then concentrated HCl / Sn  
**D** Dilute HNO<sub>3</sub> and then NaBH<sub>4</sub>

Your answer

☐

[1]

3. The skeletal formula of an organic molecule is shown below.



Which of the following statements is / are correct?

- 1: The molecule contains an amine group.  
2: The molecule contains a carboxylic acid group.  
3: The molecule contains an amide group.

- A. 1, 2 and 3  
B. Only 1 and 2  
C. Only 2 and 3  
D. Only 1

Your answer

☐

[1]

END OF QUESTION PAPER

# Mark scheme - Synthesis

Question			Answer/Indicative content	Marks	Guidance
1			<b>B</b>	<b>1</b>	<p><b><u>Examiner's Comments</u></b></p> <p>Many candidates correctly selected B. Option A proved a good distractor, presumably as candidates linked melting point to recrystallisation without fully interpreting statement 3.</p>
			<b>Total</b>	<b>1</b>	
2			<b>C</b>	1	
			<b>Total</b>	<b>1</b>	
3			<b>D</b>	1	
			<b>Total</b>	<b>1</b>	