

19. Nitrogen compounds

19.1 Primary amines

Paper 2

Marking Scheme

Q1.

(b)(ii)	$\text{CH}_3\text{CN} + 2\text{H}_2\text{O} + (1)\text{H}^+ \rightarrow \text{CH}_3\text{COOH} + \text{NH}_4^+$	1
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Q2.

(a)(iii)	(acid) hydrolysis	1
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Q3.

(c)	(Br ₂) no visible reaction OR colourless to orange / brown / yellow solution	1
	(conc. H ₂ SO ₄) no visible reaction OR Solution remains colourless	1
	(dil. AgNO ₃) white precipitate forms	1

Q4.

(b)(iv)	$(1)\text{C}_4\text{H}_9\text{CN} + (1)\text{H}^+ + 2\text{H}_2\text{O} \rightarrow (1)\text{C}_4\text{H}_9\text{CO}_2\text{H} + (1)\text{NH}_4^+$ ✓✓ <i>correct organic product showing carboxylic acid functional group</i> M1 C ₄ H ₉ CO ₂ H / C ₄ H ₉ COOH	1
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