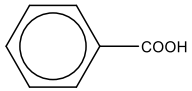
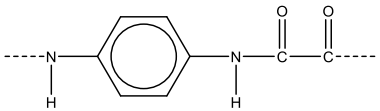
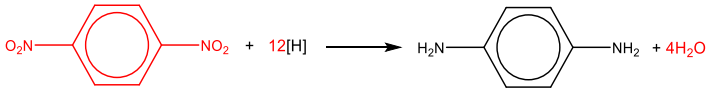
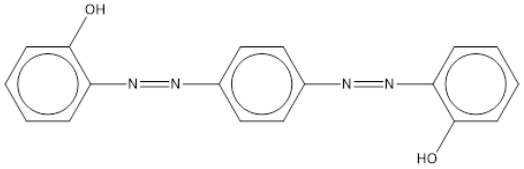
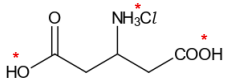
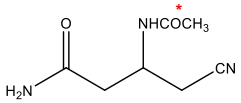
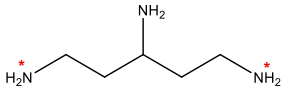
7(a)	**M1:** C*l*CH_2COOH $BrCH_2COOH$ CH_3COOH CH_3CH_2OH most acidic least acidic **M2:** electron withdrawing groups / electronegative groups / negative inductive effect **AND** weakens O–H bond / more stable anion **OR** electron donating groups / positive inductive effect **AND** strengthens O-H bond / less stable anion **M3 M4:** • chlorine is more electron-withdrawing / electronegative than bromine (related to XCH_2COOH) • electron withdrawing of C=O / negative inductive effect of C=O (related to COOH) • positive inductive effect / electron donating of alkyl / ethyl / R group (related to ROH) any two [1], all three [2]
7(b)	**M1:**  **M2:** CO_2
7(c)(i)	 **M1**: correct displayed amide bond with C=O, (C_6H_5)–N and (C–)C=O **M2**: rest of the structure correct with continuation bonds
7(c)(ii)	
7(d)(i)	**M1:**  **M2:** 

7(d)(ii)	HNO_2 (and HCl) **AND** ⩽10 °C **OR** $NaNO_2$ **AND** HCl **AND** ⩽10 °C

6(a)	sp = 1 **AND** $sp^2 = 1$ **AND** $sp^3 = 3$
6(b)(i)	acid-base / neutralisation **AND** hydrolysis
6(b)(ii)	reaction 7  reaction 8  reaction 9  any two * [1], any three * [2], any five * [3], all six * [4]
6(c)(i)	five / 5
6(c)(ii)	

proton environment	**a**	**b**	**c**
name of splitting pattern	doublet	multiplet	doublet
chemical shift range, δ / ppm	2.2–3.0	3.2–4.0	2.0–3.0

any three [1], all six [2]