



Confidential

MARK SCHEME

{6888/03}

MARKS: 40

1 (a) filtration; [1]

(b) (i) white; [1]
precipitate; [1]

(ii) chloride ion; [1]

(c) (i) universal indicator changes (from yellow) to blue / purple / mauve / violet; [1]
(ii) 9 to 14; [1]
(iii) match colour to pH chart; [1]
read value from the pH chart; [1]

(iv) ammonia gas / NH_3 ; [1]
(v) universal indicator shows alkalinity and the pH value; [1]
while litmus paper indicates alkalinity only; [1]

(vi) to avoid contamination; [1]

(d) (i) observation: bubbles produced / effervescence / hissing sound; [1]
explanation: gas is produced; [1]
(ii) increase the concentration of acid / heating / add a catalyst; [1]

(iii) avoid skin contact / wear goggles / wear protective clothing; [1]

(e) (i) white precipitate formed; [1]
(ii) precipitate does not dissolve; [1]
(iii) calcium ion; / Ca^{2+} [1]

(f) calcium carbonate; [1]

2 (a) (i) student's temperature value below $80\text{ }^{\circ}\text{C}$; [1]
(ii) temperature less than reading in (a) (i); [1]
decreasing values of temperature; [1]
same number of significant figures; [1]

(b) (ii) value of temperature at $t = 300\text{ s}$ in flask **B** more than in flask **A**; [1]

(c) ${}^{\circ}\text{C}$; [1]

(d) (i) suitable scale; [1]
at least four points correctly plotted; [1]
line of best fit; [1]
(ii) at least four points correctly plotted; [1]
both lines labelled; [1]

(e) (i) method shown; [1]
correct value; [1]
(ii) gradients negative; [1]

(f) B, has less heat loss per second; [1]

(g) minimises / reduces heat loss; [1]

(h) (i) equal drop in temperature; [1]
for every second; [1]
(ii) volume of water (same);
same thickness of glass;
same initial temperature;

[max 2] [2]