



EXAMINATIONS COUNCIL OF SWAZILAND
Swaziland General Certificate of Secondary Education

PHYSICAL SCIENCE

6888/04

Paper 4

October/November 2018

Confidential

MARK SCHEME

{6888/04}

MARKS: 40

- 1 (a) pour mixture into filtration apparatus; [1]
 solution collected as a filtrate while solid remains on filter paper; [1]
- (b) (i) white precipitate; [1]
 (ii) has no chloride ion; removes carbonate ions from solution [1]
 Which could form a precipitate, thereby contaminating the results; [1]
- (c) (i) observation: universal indicator changes (from yellow) to blue / purple /
 mauve / violet; [1]
 pH: 9 to 14; [1]
 (ii) match colour to pH chart read value from the pH chart; [1]
 (iii) ammonia gas / NH_3 ; [1]
 (iv) universal indicator shows alkalinity and the pH value; [1]
 while litmus paper indicates alkalinity only; [1]
 (v) to avoid contamination; [1]
- (d) (i) gas is produced; [1]
 (ii) increase the concentration of acid; heating; add a named catalyst; stirring;
 increase pressure; [max 2] [2]
 (iii) test: add aqueous sodium hydroxide; [1]
 result: white precipitate is formed; [1]
 precipitate insoluble in excess sodium hydroxide solution; [1]
 OR
 test: add aqueous ammonia;
 result: no precipitate / slightly white precipitate;
 no precipitate in excess;
 (iv) avoid skin contact / wear goggles / wear protective clothing; [1]
- (e) calcium carbonate; [1]

- 2** **(a)** °C; [1]
 temperature value 83° C; [1]
- (b)** linear scale; [1]
 at least four points correctly plotted for **A**; [1]
 line of best fit; [1]
 at least four points plotted correctly for **B**; [1]
 both graphs labelled; [1]
- (c)** **(i)** method shown; [1]
 correct value (and unit); [1]
 (ii) (both) gradients negative; [1]
- (d)** **B**, has less heat loss per second; [1]
- (e)** **(i)** minimises / reduces heat loss; [1]
 (ii) traps air; [1]
 (air) poor conductor; [1]
- (f)** **(i)** equal drop in temperature; [1]
 for every second; [1]
 (ii) volume of water (same) / (same) thickness of glass / (same) initial temperature /;
 AVP : size of conical flasks / same material [max 2]
- (g)** times from graphs; [1]
 difference of times; [1]