



CO-ORDINATED SCIENCES

0654/52

Paper 5 Practical Test

May/June 2016

MARK SCHEME

Maximum Mark: 45

Published

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1 (a) (i)

<i>reagent</i>	<i>Benedict's Tube A</i>	<i>biuret Tube B</i>	<i>iodine solution Tube C</i>
<i>food group tested for</i>	reducing sugar	protein	starch

one correct ;
three correct ;

[2]

(ii) peas

<i>reagent</i>	<i>Benedict's Tube A</i>	<i>biuret Tube B</i>	<i>iodine solution Tube C</i>
<i>peas</i>	(blue)	blue ;	blue-black ;

[2]

If either of responses is incorrect, check against SV results and then credit as appropriate for matches – annotate with 'SV'

(iii) sweetcorn

<i>reagent</i>	<i>Benedict's Tube A</i>	<i>biuret Tube B</i>	<i>iodine solution Tube C</i>
<i>sweetcorn</i>	yellow/green/orange/red ;	(blue)	blue-black ;

[2]

If either of responses is incorrect, check against SV results and then credit as appropriate for matches – annotate with 'SV'

(iv) to release the foods / break open cells ;

[1]

(b) starch for both peas and sweetcorn (accuracy mark) ;

correct conclusion from candidate's results for peas ;

correct conclusion from candidate's results for sweetcorn ;

[3]

ECF wording of reducing sugar from (a)(i)

(c) wore goggles / tied back hair / used tongs / gloves **AND** due to chemical tests or hot water ;

[1]

(d) peel or crush peas / sweetcorn ;

(dissolve in) ethanol ;

water added ;

no naked flames ;

cloudy / emulsion / white ;

max. [4]

[Total: 15]

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2 (a) (i) reacts with HCl/bubbles/effervescence/fizzes ;
green solution/blue-green solution/blue solution ; [2]

(ii) *test*
add ammonia solution ;

observations
(pale) blue ppt. (with ammonia) ;
dark blue solution (with excess ammonia) ;

cation
copper / copper(II) / Cu²⁺ ; [4]

(b) (i) X and limewater correctly labelled/delivery tube and test-tubes labelled ;
glassware correct including delivery tube into limewater ; [2]

(ii) (limewater) milky/white ppt. **AND** (solid green to) black ;
carbonate / CO₃²⁻ (independent of limewater observation) ; [2]

(c)

	<i>solution of Y</i>	<i>solution of Z</i>
<i>barium chloride solution</i>	white ppt. andno reaction ;
<i>silver nitrate solution</i>	no reaction / slight white ppt. andwhite ppt. ;
<i>anion is...</i>	sulfate andchloride ; (dependent on observations)

note: mark horizontally but if no marks are scored then mark vertically – 1 mark for a correct column [3]

(d) sodium hydroxide (solution)/NaOH ;
blue ppt. (if (a) incorrect allow ecf) ; [2]

[Total: 15]

3 (a) (i) initial temperature present in range 40–99 °C ; [1]

(ii) all times (30, 60, 90, 120, 150, 180) correctly entered ;
all values of *T* present ;
T values decreasing ; [3]

(iii) both units correct, s and °C ; [1]

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- (b) (i) T_P correct ; [1]
- (ii) R_P correct to 2 or more significant figures with correct rounding ; [1]
- (c) all values of T present ;
 smaller change of temperature in 180s in beaker **Q** ; [2]
IF response is a larger change, credit if SV change is also larger
- (d) (i) T_Q correct ; [1]
- (ii) R_Q correct ; [1]
- (e) using a lid because R_Q is less than R_P /using a lid because smaller fall in temperature in same time ;
 ECF (b)(d) [1]
- (f) thicker insulation / better insulation ;
 insulate the bottom of the beaker ; [2]
- (g) same size (thickness) of beakers / same initial temperature of hot water / same room temperature / same material for beaker ; [1]

[Total: 15]