

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge Ordinary Level

MARK SCHEME for the October/November 2014 series

5129 COMBINED SCIENCE

5129/21

Paper 2 (Theory), maximum raw mark 100

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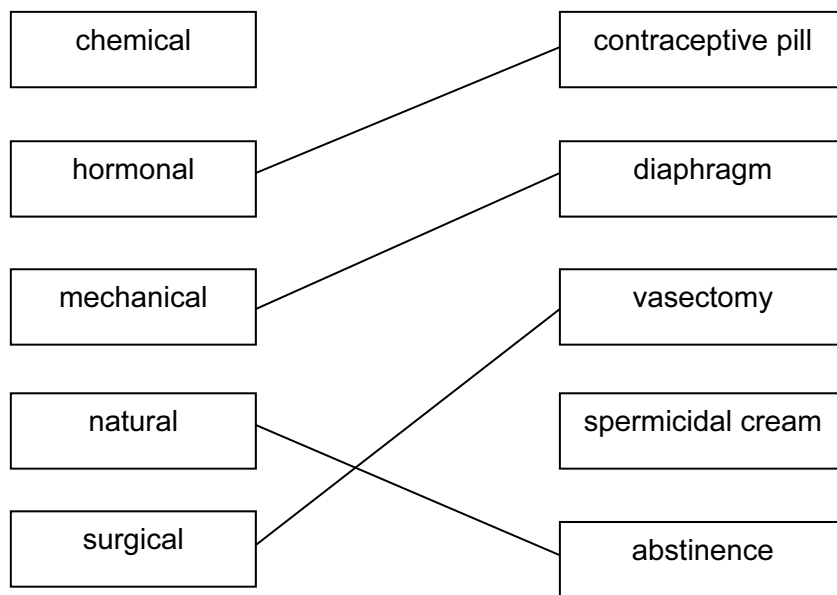
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Page 2	Mark Scheme	Syllabus	Paper
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- 1 Salivary ;
Starch ;
Oesophagus ;
Acid ;
Peristalsis ; [5]
- 2 (a) (i) 102 ; [1]
(ii) 104 ;
26 (ecf divide by 4) ; [2]
- (b) Oxidation ; [1]
- (c) Protective coating / layer ;
Of aluminium oxide ; [2]
- 3 (a) (i) $I = V/R$ or 1.2/0.2 ;
6 ; [2]
(ii) 4 or (a(i) – 2) ; [1]
- (b) $t = Q/I$ or 10/0.2 ;
50 ; [2]
- (c) Correct symbol ; [1]

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4 (a)



[4]

- (b) Condom/femidom ;
Impermeable material ;
Catches semen/sperm ;
Body fluids cannot be spread to partner ;



any 2

[1]

[2]

5 (a) E ;

[1]

(b) C ;

[1]

(c) A and D ; (both in any order)

[1]

(d) E ;

[1]

6 (a) 320 ;
N ;

[2]

(b) Equal to/same ;

[1]

(c) $a = F/m$ or 550/200 ;
2.75 ;
 m/s^2 ;

[3]

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- 7 (a) (i) 32 ; [1]
- (ii) $d = m / V$ or $35.2 / 32$; (accept $35.2 / a(i)$)
1.1 ;
 g / cm^3 ; [3]
- (b) 14 ; (accept $46 - a(i)$) [1]
- 8 (a) Pump / circulates blood ; [1]
- (b) A = aorta / wall of aorta ;
B = semi-lunar valve / aortic valve ;
C = right atrium ; [3]
- (c) (i) Less oxygen reaching cells / tissue ;
Less glucose reaching cells / tissue ; } any 2
Cells respire less ; [2]
- (ii) Inherited disposition ;
High blood pressure ;
High level of stress ;
Lack of exercise ;
Smoking ;
High level of blood cholesterol ;
High level of animal / saturated fat in the diet ;
Obesity / overweight ; } any 3 [3]
- 9 (a) A = hydrogen ;
B = water ;
C = copper(II) carbonate ; [3]
- (b) (i) Red ;
- (ii) Hydrogen / H^+ ; [2]
- (c) Limewater ;
Goes milky / cloudy / white precipitate ; [2]
- 10 (a) (i) $F \times d$ or 1.8×0.2 ;
0.36 ; [2]
- (ii) 0.8 ; [1]
- (iii) 0.6 or $0.24 + (a)(i)$; (ecf) [1]
- (b) Lead not magnetic / attracted to magnets ; [1]

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- 11 (a) **A** = epidermal (cell)/epidermis ;
B = palisade mesophyll (cell) ;
C = spongy mesophyll (cell) ; [3]
- (b) (i) carbon dioxide + water ; $\rightarrow$ glucose + oxygen ; [2]
(Each side of the equation = 1 mark)
- (ii) Converts light energy / traps / absorbs light ;
To chemical energy ; [2]
- 12 (a) **A** = petrol/gasoline ;
B = diesel ;
C = bitumen ; [3]
- (b) Same general formula ;
Similar chemical properties ;
Gradation in physical properties ;
Each member differs by $\text{CH}_2/M_r 14$; } any 1 [2]
- (c) (i) 5 3 4 ; [1]
- (ii) Limited oxygen supply/incomplete combustion ; [1]
- 13 (a) (i) Increases ; [1]
- (ii) No change ; [1]
- (b) 0 and 100 (either order) ; [1]
- (c) Stop liquid flowing back to bulb/retain reading ; [1]
- 14 (a) Electrons are shared (by the atoms) ; [1]
- (b) Low melting point/boiling point ;
Insoluble in water/soluble in organic solvents ;
Solid does not conduct electricity ; } any 2 [2]
- (c) Metal oxides react with acids/are basic ; [1]

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- 15 (a) (i)** Bacteria / microbes ; [1]
- (ii) Grass ; [1]
- (iii) Lion ; [1]
- (b)** Lost as heat from the body of the okapi ;
 Respiration releases energy for metabolic processes ;
 Used in movement of okapi ;
 Lost in urine / feces ;
 Undigested food / indigestible food ;
- } any 2 [2]
- 16 (a) (i)** No. of complete oscillations / waves per second ; [1]
- (ii) $\lambda = v/f$ or $3 \times 10^8 / 2.5 \times 10^9$;
 0.12 ; [2]
- (b) (i)** Higher ; [1]
- (ii) Same ; [1]
- 17 (a)** Iron ; [1]
- (b)** Aluminium ; [1]
- (c)** Iron ; [1]
- (d)** Zinc ; [1]
- (e)** Potassium ; [1]
- 18 (a)** Same number of protons / same element ;
 Different number of neutrons ; [2]
- (b)** 2p and 1n (both) ; [1]