**Published**

**Generic Marking Principles**

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

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| GENERIC MARKING PRINCIPLE 1:<br><br>Marks must be awarded in line with:<br><br>• the specific content of the mark scheme or the generic level descriptors for the question<br>• the specific skills defined in the mark scheme or in the generic level descriptors for the question<br>• the standard of response required by a candidate as exemplified by the standardisation scripts. |
| GENERIC MARKING PRINCIPLE 2:<br><br>Marks awarded are always **whole marks** (not half marks, or other fractions). |
| GENERIC MARKING PRINCIPLE 3:<br><br>Marks must be awarded **positively**:<br><br>• marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate<br>• marks are awarded when candidates clearly demonstrate what they know and can do<br>• marks are not deducted for errors<br>• marks are not deducted for omissions<br>• answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous. |
| GENERIC MARKING PRINCIPLE 4:<br><br>Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors. |

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

| Question | Answer | Marks |
|---|---|---|
| 1(a) | Benedict's (solution) ; | 1 |
| 1(b) | A contains protein <u>and</u> starch ;<br>B contains **reducing sugar** ;<br>C contains starch ; | 3 |
| 1(c) | wear goggles because of hot water / chemicals / named substance / (named) solutions/splashes ; | 1 |
| 1(d) | ethanol / alcohol ;<br>water <u>and</u> white emulsion ; | 2 |
| 1(e)(i) | *any two from*<br>volume of Benedict's ;<br>mass / volume of food ;<br>concentration of food ;<br>time in water bath / left for same time ;<br>temperature of water bath ; | max 2 |
| 1(e)(ii) | yellow / green indicates less (concentrated)<br>**OR**<br>orange / red indicates more (concentrated) ; | 1 |

| Question | Answer | Marks |
|---|---|---|
| 2(a)(i) | 2 test-tubes connected by delivery tube ; <br> limewater and metal carbonate in correct places ; | 2 |
| 2(a)(ii) | to avoid suck-back ; | 1 |
| 2(a)(iii) | 01:05 ; | 1 |
| 2(b)(i) | carbon dioxide / $CO_2$ ; | 1 |
| 2(b)(ii) | (fastest) copper carbonate <br> zinc carbonate <br> (slowest) magnesium carbonate ; | 1 |
| 2(b)(iii) | the more reactive the metal the slower the rate of thermal decomposition ; | 1 |
| 2(c) | measure volume of gas / height of foam / foam to top of test-tube ; <br> in a certain time ; <br> suitable diagram showing what replaces limewater test-tube ; | 3 |

| Question | Answer | Marks |
|---|---|---|
| 3(a)(i) | A and W ; | 1 |
| 3(a)(ii) | 0.15 (V) ; | 1 |
| 3(a)(iii) | 0.03 (W) ; | 1 |
| 3(b) | so that wire does not become hot / resistance of wire might change / cell or battery may run down ; | 1 |
| 3(c)(i) | axes labelled with units ;<br>suitable choice of scales $\geqslant$ half the grid used ;<br>plots correct to half a small square ; | 3 |
| 3(c)(ii) | good best-fit line judgement ; | 1 |
| 3(d) | (directly) proportional ;<br>straight line through the origin ; | 2 |

| Question | Answer | Marks |
|---|---|---|
| 4(a) | red blood cell labelled R **and** <br> white blood cell labelled W ; | 1 |
| 4(b)(i) | clear and continuous single outline ; <br> nucleus lobes ; <br> larger than original ; | 3 |
| 4(b)(ii) | Correct magnification (width of cell in drawing in mm / 35) ; | 1 |
| 4(c)(i) | 203 ; | 1 |
| 4(c)(ii) | rest before taking pulse (minimum 1 minute) ; <br> pulse taken on suitable location on body ; <br> count beats / pulse ; <br> specified time ; <br> rate = beats divided by time / multiply correctly to give beats / min (e.g. beats in 10 seconds $\times$ 6 to give bpm) ; <br> takes it several times until similar / repeat to check ; | max 4 |

| Question | Answer | Marks |
|---|---|---|
| 5(a)(i) | below the level of the pencil line ; | 1 |
| 5(a)(ii) | so will not run in the ethanol / will not interfere with inks / will not move / will not mix ; | 1 |
| 5(a)(iii) | fire risk / flammable ethanol / stop (solvent) evaporating ; | 1 |
| 5(b)(i) | 3 ; | 1 |
| 5(b)(ii) | red and blue and 1 other colour ;<br>spots line up with each other / same $R_f$ value ; | 2 |
| 5(c)(i) | black ink dissolves in ethanol / does not dissolve in water ; | 1 |
| 5(c)(ii) | inks spread out (more) / easier to tell the difference between the spots / errors in measurement are less ; | 1 |
| 5(d) | dissolve colour from sweet into ethanol / water ;<br>run chromatogram of sweet and red ink / black ink ; | 2 |

| Question | Answer | Marks |
|---|---|---|
| 6(a) | measure the height of one stair <u>and</u> multiply by the number of stairs ; | 1 |
| 6(b)(i) | student gets more tired / fatigued ; | 1 |
| 6(b)(ii) | (2.07 + 2.13 + 2.25 + 2.37) / 4 ;<br>2.21 (s) ; | 2 |
| 6(c)(i) | 460 (N) ; | 1 |
| 6(c)(ii) | to obtain a steady reading ; | 1 |
| 6(c)(iii) | to avoid parallax error ; | 1 |
| 6(d)(i) | 1288 (J) ; | 1 |
| 6(d)(ii) | 583 (W) ; | 1 |
| 6(e) | second student's power is less because same work done in more time ; | 1 |