A-level
BIOLOGY
7402/1

Paper 1

Mark scheme

June 2019

Version: 1.0 Final

196A7402/1/MS

Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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Mark scheme instructions to examiners

1. General

The mark scheme for each question shows:

- the marks available for each part of the question
- the total marks available for the question
- the typical answer or answers which are expected
- extra information to help the examiner make his or her judgement and help to delineate what is acceptable or not worthy of credit or, in discursive answers, to give an overview of the area in which a mark or marks may be awarded.

The extra information in the 'Comments' column is aligned to the appropriate answer in the left-hand part of the mark scheme and should only be applied to that item in the mark scheme.

At the beginning of a part of a question a reminder may be given, for example: where consequential marking needs to be considered in a calculation; or the answer may be on the diagram or at a different place on the script.

In general the right-hand side of the mark scheme is there to provide those extra details which confuse the main part of the mark scheme yet may be helpful in ensuring that marking is straightforward and consistent.

2. Emboldening

2.1 In a list of acceptable answers where more than one mark is available 'any **two** from' is used, with the number of marks emboldened. Each of the following bullet points is a potential mark.

2.2 A bold **and** is used to indicate that both parts of the answer are required to award the mark.

2.3 Alternative answers acceptable for the same mark are indicated by the use of **OR**. Different terms in the mark scheme are shown by a / ; eg allow smooth / free movement.

3. Marking points

3.1 Marking of lists

This applies to questions requiring a set number of responses, but for which students have provided extra responses. The general principle to be followed in such a situation is that 'right + wrong = wrong'.

Each error / contradiction negates each correct response. So, if the number of errors / contradictions equals or exceeds the number of marks available for the question, no marks can be awarded.

However, responses considered to be neutral (often prefaced by 'Ignore' in the 'Comments' column of the mark scheme) are not penalised.

3.2 Marking procedure for calculations

Full marks can be given for a correct numerical answer, without any working shown.

However, if the answer is incorrect, mark(s) can usually be gained by correct substitution / working and this is shown in the 'Comments' column or by each stage of a longer calculation.

3.3 Interpretation of 'it'

Answers using the word 'it' should be given credit only if it is clear that the 'it' refers to the correct subject.

3.4 Errors carried forward, consequential marking and arithmetic errors

Allowances for errors carried forward are most likely to be restricted to calculation questions and should be shown by the abbreviation ECF or consequential in the mark scheme.

An arithmetic error should be penalised for one mark only unless otherwise amplified in the mark scheme. Arithmetic errors may arise from a slip in a calculation or from an incorrect transfer of a numerical value from data given in a question.

3.5 Phonetic spelling

The phonetic spelling of correct scientific terminology should be credited **unless** there is a possible confusion with another technical term.

3.6 Brackets

(…..) are used to indicate information which is not essential for the mark to be awarded but is included to help the examiner identify the sense of the answer required.

3.7 Ignore / Insufficient / Do not allow

Ignore or insufficient is used when the information given is irrelevant to the question or not enough to gain the marking point. Any further correct amplification could gain the marking point.

Do **not** allow means that this is a wrong answer which, even if the correct answer is given, will still mean that the mark is not awarded.

Question	Marking Guidance	Mark	Comments
1.1	1. Attaches to the enzyme at a site other than the active site; 2. Changes (shape of) the active site **OR** Changes tertiary structure (of enzyme); 3. (So active site and substrate) no longer <u>complementary</u> **so** less/no substrate can fit/bind;	3	1. Accept 'attaches to allosteric/inhibitor site' 3. Accept 'no longer <u>complementary</u> **so** less/no enzyme-substrate complexes form' 3. Accept abbreviations of enzyme-substrate complex.
1.2	(With inhibitor) increase substrate/lipid (concentration) does not increase/affect/change rate of reaction **OR** (With inhibitor) increase substrate/lipid (concentration) does not increase/affect/change lipase activity **OR** High substrate (concentration) does not overcome inhibition **OR** High substrate (concentration) does not meet maximum rate of reaction/lipase activity;	1	Ignore references to competitive inhibitors.
1.3	(Maximum length) 8-10 (μm); (Uncertainty) (±) 2 (μm);	2	
1.4	1. Emulsification; 2. (Cannot be seen) **due to** resolution (of optical microscope);	2	1. Ignore 'micelles' 2. Ignore reference to magnification. 2. For 'resolution' accept 'wavelength of light'.

<table>
<tr><th>Question</th><th>Marking Guidance</th><th>Mark</th><th>Comments</th></tr>
<tr><td>2.1</td><td>
<table>
<tr><th>Cell wall component</th><th>Plants</th><th>Algae</th><th>Fungi</th><th>Prokaryotes</th></tr>
<tr><td>Cellulose</td><td>✓</td><td>✓</td><td></td><td></td></tr>
<tr><td>Murein</td><td></td><td></td><td></td><td>✓</td></tr>
<tr><td>Chitin</td><td></td><td></td><td>✓</td><td></td></tr>
</table>
; ; ;
</td><td>3</td><td>1st 2 columns correct (Plants and Algae) = 1 mark
3rd column correct (Fungi) = 1 mark
4th column correct (Prokaryotes) = 1 mark
Accept alternative symbols that clearly indicate the box but are not ticks eg X.
If answer clearly crossed out read box as blank.</td></tr>
</table>

Question	Marking Guidance	Mark	Comments
2.2	1. Negative <u>correlation</u> (between fibre eaten per day and risk of cardiovascular disease); 2. Original/current fibre intake (of student) not known; 3. (Idea of) significance linked to (2x) standard deviation overlap (at 10 g day^{-1} change); 4. If current intake between 5 and 30 (g day^{-1}) then (eating 10g more results in a significant) decrease in risk **OR** If current intake between 30 and 50 (g day^{-1}) then (eating 10g more results in) **no** significant decrease in risk; 5. Correlation does not mean causation **OR** Another **named** factor may be involved; 6. Little evidence/data for higher mass of fibre per day; 7. Large (2x) standard deviation at high/low mass of fibre makes (mean) less precise **OR** Large (2x) standard deviation at high/low amounts of fibre means there is a greater uncertainty; 8. No statistical test (to show if differences are significant);	4 max	1. Accept positive <u>correlation</u> with reduced risk 2. Accept 'it depends on original/current fibre intake'. 3. This is for the correct concept, ignore stated values. 3. Ignore reference to probability and chance. 4. Accept stated values between 5 and 30 for (significant) decrease in risk. 4. Accept stated values between 30 and 50 for no significant decrease in risk. 4. Ignore stated values less than 5 or more than 50. 5. Examples of named factors - smoking, exercise, age, sex, genes, other aspects of diet. 7. For 'precise' accept reliable or description of precise/reliable.

Question	Marking Guidance	Mark	Comments
2.3	(Advantage) 1. Over longer period so more representative **OR** Diet over 24 hr may not be representative **OR** Diet may vary during the year/from day to day **OR** Person more likely to be honest on questionnaire (rather than speaking to nurse) **OR** More cost effective **because** fewer people/nurses required; (Disadvantage) 2. Relies on (long term) memory so may not be accurate **OR** Recall of 24 hr diet likely to be more accurate **OR** Estimation (from FFQ) may be less accurate (than details of last 24hrs) **OR** Person may be more honest when being interviewed;	2	Only credit reference to 'honesty' once. 2. For 'accurate' accept **only** 'valid' or 'close to true value'. 2. Accept examples of 'estimation (from FFQ)' eg frequency of eating may not give mass of fibre, type of food may not give mass of fibre, no information on portion size to give mass of fibre. These must all be accompanied by idea of reduced accuracy.

Question	Marking Guidance	Mark	Comments
3.1	(Number of species and) number of individuals in each species (in each habitat) **OR** (Number of species and) population of each species (in each habitat);	1	Accept organisms for individuals Ignore frequency. Accept abundance of each species.
3.2	1. Random samples; 2. Large number (of samples) **OR** (Continue sampling) until stable running mean;	2	Both marks can be awarded on one line. Ignore other answers unless they contradict mark points. 2. Accept many/multiple. Ignore several. 2. If a specified number is given, it must be 10 or more. 2. Accept 'large sample (size)'.
3.3	(Larger fields have relatively) More centre **OR** Less edge **OR** Less hedge **OR** Fewer <u>species</u>;	1	Ignore removal of hedge (as given in stem).

Question	Marking Guidance	Mark	Comments
3.4	Advantage - 1. Greater (bio)diversity **so** increase in predators of pests **OR** Increase in predators of pests **so** more yield/income/less pesticides/less damage to crops **OR** Increase in pollinators **so** more yield/income **OR** May attract more tourists/subsidies to their farm **so** more income (from diversification); Disadvantage - 2. Reduced land area **for** crop growth/income **OR** Greater (bio)diversity **so** increase pest population **OR** Increase pest population **so** less yield/less income/(more) need for pesticides/(more) damage to crops **OR** Increased (interspecific) competition **so** less yield/income **OR** More difficult to farm **so** less income;	2	Accept description of yield eg crop growth. For 'crop' accept 'plant'. Accept other valid suggestions **with** explanation that will affect the farm as a whole. Examples of 'more difficult to farm' – can't use large machinery, more difficult to plough/seed/harvest.

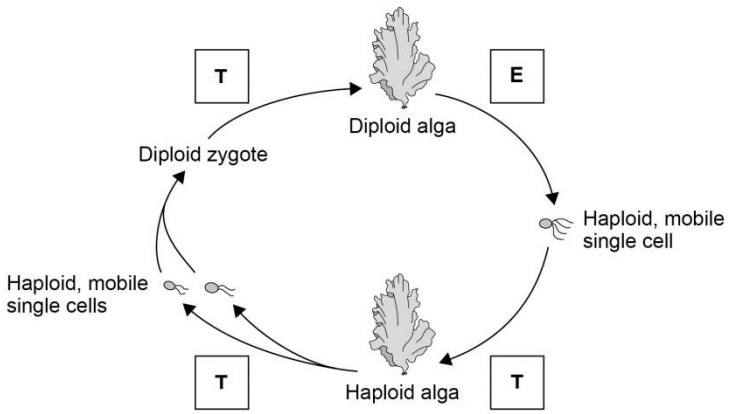
Question	Marking Guidance	Mark	Comments
4.1	1. (Most likely to be) transferred to a special care unit are those under 2800 g **OR** (Most likely to be) transferred to a special care unit are those over 4200 g; 2. Extreme mass babies least likely to survive (to reproduce) **and** so less likely to pass on their <u>alleles</u> (for extreme mass at birth); 3. Extreme mass at birth decreases in frequency (in the population) **OR** <u>Alleles</u> (for extreme mass at birth) decrease in frequency (in the population); If neither 1 or 2 awarded allow correct stated mass less/more likely to survive for 1 mark	3	Accept converse answers linked to those with mass at birth at any value between 2800 and 4200 g. 1. For '2800 g' accept any value between 1400 g and 2800 g. 1. For '4200 g' accept any value between 4200 g and 5200 g. 1. If values for both extremes are given, both must be correct. 1. Reject data quoted below 1400 g or above 5200 g. 3. Accept 'proportion/percentage' for 'frequency'. 3. Do not accept 'number' for 'frequency'.
4.2	1. Allele 2. Locus/loci 3. Transcribed 4. Translated 5. Golgi (apparatus)/<u>Rough</u> endoplasmic reticulum 6. Tertiary;;;	3 max	6 correct = 3 marks 4 – 5 correct = 2 marks 2 – 3 correct = 1 mark 0 – 1 correct = 0 marks 2. Do not accept locust. 3. Accept transcripted. 3. Ignore spliced. 5. Reject smooth endoplasmic reticulum. 5. Ignore RER/ER. 6. Ignore 3D. 6. Accept secondary.
4.3	Automarked q – ☑ Chi-squared	1	

Question	Marking Guidance	Mark	Comments
4.4	1. Probability that difference (in frequency of births above 4500 g) is due to chance is **less than** 0.05 **OR** Probability that difference (in frequency of births above 4500 g) is due to chance **is** 0.03; 2. Reject null hypothesis; 3. Presence of *KIR2DS1/*allele does (significantly) affect the frequency of high birth mass;	3	Ignore reference to critical value. 1. Accept 5% for 0.05 1. Accept 3% for 0.03 1. Ignore results due to chance. 1. Accept 'Probability that difference (in frequency of births above 4500 g) is **not** due to chance is **greater than** 0.95' **OR** **'**Probability that difference (in frequency of births above 4500 g) is **not** due to chance **is** 0.97' 2. Accept 'H_0' for null hypothesis. 2. For 'reject' accept 'do not accept' but not 'disprove/wrong'. 2. Accept 'Accept the alternate hypothesis/H_1'. 3. Do not accept 'number' for 'frequency'.

Question	Marking Guidance	Mark	Comments
5.1	1. RNA (as genetic material); 2. Reverse transcriptase; 3. (Protein) capsomeres/capsid; 4. (Phospho)lipid (viral) envelope **OR** Envelope made of membrane; 5. Attachment proteins;	4 max	Accept a labelled diagram. 1. Reject nucleus/DNA/plasmids. 3. Reject capsule. 4. Reject if HIV has a cell membrane or a cell wall. 5. Accept gp41 and/or gp 120. 5. Accept glycoprotein. 5. Accept description of attachment protein. 5. Ignore 'receptor protein'. Ignore cytoplasm.
5.2	Automarked q – ☑ 106	1	
5.3	1. (All) have more T helper/CD4 cells; 2. Lower viral load **to** infect/destroy helper T/CD4 cells; 3. (So more/continued) activation of B cells/cytotoxic T cells/phagocytes; 4. (With B cells more/continued) production of plasma cells/antibodies **OR** (With cytotoxic T cells more/continued) ability to kill virus infected cells; 5. (More able to) destroy other microbes/pathogens OR (More able to) destroy mutated/cancer cells;	3 max	1. Accept higher proportion of T helper/CD4 to virus particles. 1. and 2. Statement must be comparative. 2. For 'infect' accept 'HIV does not reproduce in'. 3. Accept 'stimulation' for 'activation'. 4. Ignore reference to B cells acting as phagocytes/antigen-presenting cells.

Question	Marking Guidance	Mark	Comments
6.1	1. (Trend of) slowing growth from before birth to 21 days **OR** (Trend of) decreasing percentage undergoing mitosis from before birth to 21 days **OR** (Trend of) decreasing percentage undergoing DNA replication from before birth to 21 days; 2. DNA replication happens before mitosis **OR** Heart growth slowing **until** (fully) developed **OR** These cells lost the **ability to** divide;	2	1. Accept 'day -6' for 'before birth'. 1. For '21 days' accept 'until the end of the investigation'. 2. Accept 'Heart growing/developing before birth **and** becomes (fully) developed'. 2. Accept reference to only unipotent cells/cardiomycetes dividing (at 21 days).
6.2	1. DNA helicase; 2. Breaks hydrogen bonds (between 2 DNA strands); 3. BrdU complementary to <u>adenine</u> (on template strand) **OR** BrdU forms hydrogen bonds with <u>adenine</u> (on template strand); 4. DNA polymerase joins (adjacent) <u>nucleotides</u> (to incorporate BrdU into the new DNA strand); 5. <u>Phosphodiester bonds</u> form (between nucleotides);	5	2. Reject 'hydrolyses hydrogen bonds' 2 and 3. Accept H bonds for hydrogen bonds. 4. Reject if DNA polymerase catalyses complementary base pairing or if DNA polymerase catalyses nucleotides joining to template strand.

Question	Marking Guidance	Mark	Comments
6.3	1. Add antibody (anti-BrdU with enzyme attached) to cells/DNA **OR** Add cells/DNA to antibody (anti-BrdU with enzyme attached); 2. Wash (cells/DNA) **to** remove excess/unattached antibody **OR** Wash (immobilised antibody) **to** remove excess/unattached cells/DNA; 3. Add substrate **to** cause colour change;	3	All mark points must relate to procedure. Do not negate any mark point for use of additional antibodies. 2. Allow ECF for absence of cells/DNA. 3. For 'substrate' accept description in context of enzyme.

Question	Marking Guidance	Mark	Comments
7.1	Short diffusion pathway (to cells) **OR** It has a surface permeable (to water/ions into cells);	1	Accept the idea of not needing structural support as supported by the water. Ignore pores/stomata
7.2	 1. E in top right box; (1 mark) 2. 3 x T in top and bottom left and bottom right boxes; (1 mark)	2	Accept answers written beside the box but clearly intended for that box. 1. Accept 'meiosis' for 'E' (spelling **must** be correct) 2. Accept 'mitosis' for 'T' (spelling **must** be correct) 1. Reject anything other than 'E/meiosis' written in the top right box 2. Reject anything other than 'T/mitosis' written in top left, bottom left and bottom right boxes. If 1 x E and 3 x T but written in incorrect boxes = 0 marks

Question	Marking Guidance	Mark	Comments
7.3	1. They are different species; 2. (So) if fused together they would not produce fertile offspring **OR** (So) they have named characteristics that means they are reproductively isolated;	2	2. For 'fuse' accept 'form a zygote'. 2. Accept • if they fused together meiosis could not occur • if they fused together (chromosomes) could not form homologous pairs • if they fused production of gametes could not occur. 2. Accept a description of characteristics that would lead to reproductive isolation eg • will not successfully fuse with one another • produce single cells at different times • description of geographical isolation. Accept the description on its own, the phrase 'reproductive isolation' is not required.

Question	Marking Guidance	Mark	Comments
8.1	<table><tr><th>Water potential / MPa</th><th>Concentration of sodium chloride solution / mol dm^{-3}</th><th>Volume of 1 mol dm^{-3} sodium chloride solution / cm^3</th><th>Volume of Water / cm^3</th></tr><tr><td>−1.95</td><td>0.04</td><td>0.8</td><td>19.2</td></tr></table>	2	1 mark for each row. If values do not match the given unit, max 1. Accept dm^3 / mm^3 for volume unit. Accept 0.0008/8 x 10^{-4} and 0.0192/1.92 x 10^{-2} Accept 800 and 19200 Ignore units in 2nd row. Do not accept mm^{-3}/cm^{-3}/dm^{-3}/ ml
8.2	Correct answer of 0.07 (mol dm^{-3}) **= 2 marks**;; Incorrect answer 1 mark for any evidence of 48.6 to 48.8 **OR** 0.02 **OR** 0.7 **OR** A final answer between 0.04 and 0.10 **OR** A final answer of **minus** 0.07/-0.07;	2	Ignore minus signs on other 1 mark options.

Question	Marking Guidance	Mark	Comments
8.3	Correct answer of 9 (cm^2) **= 2 marks**;; Incorrect answer 1 mark for evidence of water potential of between -1.85 and -1.95 (MPa) **OR** growth of 15% **OR** 69 (cm^2) **OR** A final answer between 8.7 and <9;	2	Allow 9.0 Accept correct reading labelled on the graph shown on **Figure 8** or **Figure 9**.
8.4	**EITHER** 1. Low/slow growth; 2. Due to smaller number/area of stomata (for gas exchange); **OR** 3. Growth may continue at lower water potentials; 4. (Due to) adaptations in enzymes involved in photosynthesis/metabolic reactions;	2 max	Mark as pair – 1 and 2 **OR** 3 and 4. 2. Reference to stomata must not relate only to water loss.
8.5	1. Stomata close; 2. Less carbon dioxide (uptake) for less photosynthesis/glucose production;	2	2. 'Less' only required once. 2. Reject 'no photosynthesis' but accept 'carbon dioxide can't enter so less photosynthesis'. 2. Ignore oxygen for respiration but reject oxygen for photosynthesis. 2. Ignore less water for photosynthesis. 2. Accept only correct chemical formulae. 2. For 'glucose' accept named product of photosynthesis eg triose phosphate, TP, amino acid, lipid.

Question	Marking Guidance	Mark	Comments
9.1	1. y axis 0 – 100 in linear scale **and** x axis minimum 1 to 8 in linear scale **and** both axes use at least half size of grid; 2. Correct plots for 50% and 25% for both animals; 3. Both curves levelling off (at higher partial pressures and at percentage saturations ≤100%);	3	1. If tick marks are used on the axis, they must be accurate to within ± half a small square. 2. 25% - 1.9, 3.3 and 50% - 3.2 and 6.5 2. Accept plot ± half a small square.
9.2	Correct answer of 15 (times faster) **= 2marks** ;; If ≥3sf given, accept answers in the range 15.0 to 15.4 (times faster) **= 2marks**;; Incorrect answer 1 mark for evidence of: $23^{-0.27}$ divided by $550\ 000^{-0.27}$ **OR** 0.42888777 **OR** 0.02819045 **OR** Between 27 and 27.1 **OR** Between 1.77599861 and 1.8 **OR** $0.06^{\bullet}$	2	Accept any number of significant figures ≥2, if rounding correct.

Question	Marking Guidance	Mark	Comments
9.3	1. Mouse <u>haemoglobin/Hb</u> has a lower affinity for oxygen **OR** For the same pO_2 the mouse <u>haemoglobin/Hb</u> is less saturated **OR** At oxygen concentrations found in tissue mouse <u>haemoglobin/Hb</u> is less saturated; 2. **More** oxygen can be dissociated/released/unloaded (for metabolic reactions/respiration);	2	1. For 'Hb is less saturated' accept 'less oxygen will be bound to Hb'. 2. Accept 'oxygen dissociated/released/unloaded **more** readily/easily/quickly' 2. Reject 'oxygen loaded more readily/easily/quickly' or 'more oxygen loaded'
9.4	Mouse 1. (Smaller so) larger surface area to volume ratio; 2. More/faster heat loss (per gram/in relation to body size); 3. (Faster rate of) respiration/metabolism releases heat;	3	Accept converse answers in relation to the horse. 1. Accept larger SA:V. 1. and 2. must be comparative. 2. Ignore heat lost more easily/readily. 3. Accept respiration/metabolism replaces heat. 3. Reject produce/generate heat/energy.

Question	Marking Guidance	Mark	Comments
10.1	1. A metabolite **in** condensation/hydrolysis/ photosynthesis/respiration; 2. A solvent **so** (metabolic) reactions can occur **OR** A solvent **so** allowing transport of substances; 3. High heat capacity **so** buffers changes in temperature; 4. Large latent heat of vaporisation **so** provides a cooling effect (through evaporation); 5. Cohesion (between water molecules) **so** supports columns of water (in plants); 6. Cohesion (between water molecules) **so** produces surface tension supporting (small) organisms;	5 max	3. For 'buffer' accept 'resist'. 5. For 'columns of water' accept 'transpiration stream'. Do not credit 'transpiration' alone but accept description of 'stream'. 5. For 'columns of water' accept 'cohesion-tension (theory)'. 5 and 6. For cohesion accept hydrogen bonding Ignore reference to pH. Allow other suitable properties but must have a valid explanation. For example • ice floating **so** maintaining aquatic habitat beneath • water transparent **so** allowing light penetration for photosynthesis

Question	Marking Guidance	Mark	Comments
10.2	Lipid 1. Add ethanol/alcohol **then** add water **and** shake/mix OR Add ethanol/alcohol **and** shake/mix **then** pour into/add water; 2. White/milky emulsion **OR** emulsion test turns white/milky; Non-reducing sugar 3. Do Benedict's test **and** stays blue/negative; 4. Boil with acid **then** neutralise with alkali; 5. Heat with Benedict's **and** becomes red/orange (precipitate); Amylase 6. Add biuret (reagent) **and** becomes purple/violet/mauve/lilac; 7. Add starch, (leave for a time), test for reducing sugar/absence of starch;	5 max	4 max if marks gained from only 2 substance tests. 1. Reject heating emulsion test. 1. Accept 'Add Sudan III and mix'. 2. Ignore cloudy. 2. Reject precipitate. 2. Accept (for Sudan III) top (layer) red. 3. Ignore details of method for Benedict's test for this mp. 4. Accept named examples of acids/alkalis. 5. Do not credit mp5 if no attempt at mp4. 5. For 'heat' ignore 'warm'/'heat gently'/'put in a water bath' but accept stated temperatures ≥60°C. 5. Heat must be stated again, do not accept using residual heat from mp4. 5. Accept 'do the Benedict's test' **if** full correct method given elsewhere. 5. Accept 'sodium carbonate, sodium citrate and copper sulfate solution' for Benedict's but must have all three if term 'Benedict's' not used. 6. Accept 'sodium or potassium hydroxide and copper sulfate solution' for 'biuret'. 6. Reject heating biuret test.

Question	Marking Guidance	Mark	Comments
10.3	1. A condensation reaction joins monomers together **and** forms a (chemical) bond **and** releases water; 2. A hydrolysis reaction breaks a (chemical) bond between monomers **and** uses water; 3. A suitable example of polymers and the monomers from which they are made; 4. A second suitable example of polymers and the monomers from which they are made; 5. Reference to a correct bond within a named polymer;	5	Ignore reference to dimers. 3. and 4. Polymers must contain many monomers. 3. and 4: suitable examples include • amino acid **and** polypeptide, protein, enzyme, antibody or specific example • nucleotide **and** polynucleotide, DNA or RNA • Alpha glucose **and** starch/glycogen • Beta glucose **and** cellulose. If neither specific carbohydrate example is given, allow monosaccharide/glucose **and** polysaccharide. 3. and 4. Reject (once) reference to triglycerides. 5. Reject reference to ester bond.