GCE

Biology B

H422/02: Scientific literacy in biology

A Level

Mark Scheme for June 2024

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

MARKING INSTRUCTIONS

PREPARATION FOR MARKING
RM ASSESSOR

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: *RM Assessor Assessor Online Training*; *OCR Essential Guide to Marking*.

2. Make sure that you have read and understood the mark scheme and the question paper for this unit. These are posted on the RM Cambridge Assessment Support Portal http://www.rm.com/support/ca

3. Log-in to RM Assessor and mark the **required number** of practice responses ("scripts") and the **number of required** standardisation responses.

   YOU MUST MARK 10 PRACTICE AND 10 STANDARDISATION RESPONSES BEFORE YOU CAN BE APPROVED TO MARK LIVE SCRIPTS.

MARKING

1. Mark strictly to the mark scheme.

2. Marks awarded must relate directly to the marking criteria.

3. The schedule of dates is very important. It is essential that you meet the RM Assessor 50% and 100% (traditional 40% Batch 1 and 100% Batch 2) deadlines. If you experience problems, you must contact your Team Leader (Supervisor) without delay.

4. If you are in any doubt about applying the mark scheme, consult your Team Leader by telephone or the RM Assessor messaging system, or by email.

5. **Crossed Out Responses**
   Where a candidate has crossed out a response and provided a clear alternative then the crossed out response is not marked. Where no alternative response has been provided, examiners may give candidates the benefit of the doubt and mark the crossed out response where legible.

   Rubric Error Responses – Optional Questions
   Where candidates have a choice of question across a whole paper or a whole section and have provided more answers than required, then all responses are marked and the highest mark allowable within the rubric is given. Enter a mark for each question answered into RM assessor, which will select the highest mark from those awarded. *(The underlying assumption is that the candidate has penalised themselves by attempting more questions than necessary in the time allowed.)*

Multiple Choice Question Responses
When a multiple choice question has only a single, correct response and a candidate provides two responses (even if one of these responses is correct), then no mark should be awarded (as it is not possible to determine which was the first response selected by the candidate).
When a question requires candidates to select more than one option/multiple options, then local marking arrangements need to ensure consistency of approach.

Contradictory Responses
When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.

Short Answer Questions (requiring only a list by way of a response, usually worth only **one mark per response**)
Where candidates are required to provide a set number of short answer responses then only the set number of responses should be marked. The response space should be marked from left to right on each line and then line by line until the required number of responses have been considered. The remaining responses should not then be marked. Examiners will have to apply judgement as to whether a 'second response' on a line is a development of the 'first response', rather than a separate, discrete response. *(The underlying assumption is that the candidate is attempting to hedge their bets and therefore getting undue benefit rather than engaging with the question and giving the most relevant/correct responses.)*

Short Answer Questions (requiring a more developed response, worth **two or more marks**)
If the candidates are required to provide a description of, say, three items or factors and four items or factors are provided, then mark on a similar basis – that is downwards (as it is unlikely in this situation that a candidate will provide more than one response in each section of the response space.)

Longer Answer Questions (requiring a developed response)
Where candidates have provided two (or more) responses to a medium or high tariff question which only required a single (developed) response and not crossed out the first response, then only the first response should be marked. Examiners will need to apply professional judgement as to whether the second (or a subsequent) response is a 'new start' or simply a poorly expressed continuation of the first response.

6. Always check the pages (and additional objects if present) at the end of the response in case any answers have been continued there. If the candidate has continued an answer there, then add a tick to confirm that the work has been seen.

7. Award No Response (NR) if:
    - there is nothing written in the answer space

Award Zero '0' if:

- anything is written in the answer space and is not worthy of credit (this includes text and symbols).

Team Leaders must confirm the correct use of the NR button with their markers before live marking commences and should check this when reviewing scripts.

8. The RM Assessor **comments box** is used by your team leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason.**
If you have any questions or comments for your team leader, use the phone, the RM Assessor messaging system, or e-mail.

9. Assistant Examiners will send a brief report on the performance of candidates to their Team Leader (Supervisor) via email by the end of the marking period. The report should contain notes on particular strengths displayed as well as common errors or weaknesses. Constructive criticism of the question paper/mark scheme is also appreciated.

10. For answers marked by levels of response:

Read through the whole answer from start to finish, using the Level descriptors to help you decide whether it is a strong or weak answer. The indicative scientific content in the Guidance column indicates the expected parameters for candidates' answers, but be prepared to recognise and credit unexpected approaches where they show relevance. Using a 'best-fit' approach based on the skills and science content evidenced within the answer, first decide which set of level descriptors, Level 1, Level 2 or Level 3, best describes the overall quality of the answer.

Once the level is located, award the higher or lower mark:

The higher mark should be awarded where the level descriptor has been evidenced and all aspects of the communication statement (in italics) have been met.

The lower mark should be awarded where the level descriptor has been evidenced but aspects of the communication statement (in italics) are missing.

In summary:

The skills and science content determines the level.

The communication statement determines the mark within a level.

Level of response questions on this paper are **2(e)** and **6(b).**

11. **Annotations**

Marking Annotations

Annotation	Use
BOD	Benefit of Doubt
CON	Contradiction
	Cross
ECF	Error Carried Forward
GM	Given Mark
	Extendable horizontal wavy line (to indicate errors / incorrect science terminology)
I	Ignore
	Large dot (various uses as defined in mark scheme)
	Highlight (various uses as defined in mark scheme)
NBOD	Benefit of the doubt not given
	Tick
^	Omission Mark
BP	Blank Page
L1	Level 1 answer in Level of Response question
L2	Level 2 answer in Level of Response question
L3	Level 3 answer in Level of Response question

12. **Subject Specific Marking Instructions**

Abbreviations, annotations and conventions used in the detailed Mark Scheme (to include abbreviations and subject-specific conventions).

Annotation	Meaning
I	alternative and acceptable answers for the same marking point
✓	Separates marking points
DO NOT ALLOW	Answers which are not worthy of credit
IGNORE	Statements which are irrelevant
ALLOW	Answers that can be accepted
( )	Words which are not essential to gain credit
__	Underlined words must be present in answer to score a mark
ECF	Error carried forward
AW	Alternative wording
ORA	Or reverse argument

13. **Subject-specific Marking Instructions**

INTRODUCTION

Your first task as an Examiner is to become thoroughly familiar with the material on which the examination depends. This material includes:

- the specification, especially the assessment objectives
- the question paper
- the mark scheme.

You should ensure that you have copies of these materials.

You should ensure also that you are familiar with the administrative procedures related to the marking process. These are set out in the OCR booklet **Instructions for Examiners**. If you are examining for the first time, please read carefully **Appendix 5 Introduction to Script Marking: Notes for New Examiners**.

Please ask for help or guidance whenever you need it. Your first point of contact is your Team Leader.

Question			Answer	Marks	Guidance
1	(a)	(i)	the <u>alleles</u> present (in an individual) ✓	1	
1	(a)	(ii)	expression of the genotype / AW ✓ (and) its interaction with the environment ✓	2	**ALLOW** visible / physical , characteristics / traits **ALLOW** influence of environment **IGNORE** effect of environment
1	(b)	(i)	*evidence* 8 / 10 / children of 3 **and** 4 , has blue eyes but parents , have brown eyes / don't have blue eyes ✓ *explanation* both 3 **and** 4 are , carriers / heterozygous ✓ **OR** *evidence* 4 / 5 / children of 1, has brown eyes but , one parent / 1 , has blue eyes ✓ *explanation* parent 1 is homozygous recessive / blue is masked in phenotype ✓	2	**ALLOW** (both) parent**s** of , 8 /10 , are , heterozygous / carriers

Question			Answer	Marks	Guidance
1	(b)	(ii)	10 has blue eyes but , father / 4 , does not ✓ (so) 10 received recessive allele from 3 and 4 ✓ **OR** there would be no blue-eyed females ✓ (as) 4 would be X^BY ✓	2	**ALLOW** for 2 marks "if the gene was X-linked, 10 would have inherited a dominant brown allele from 4'
1	(b)	(iii)	the data is categorical / not mean values ✓ (data has) theoretical ratios / expected values ✓ compares observed (with expected phenotypes) ✓	2	**ALLOW** for 2 marks for 'compares observed with expected values'
1	(b)	(iv)	genotypes are unknown (so cannot determine categories) ✓ expected values , cannot be predicted / not given ✓ sample size is too small ✓	max 1	

1	**(c)**	**(i)**	*idea that* eye colour is controlled by multiple genes ✓ *idea that* the child does not have intron 86 ✓ can produce higher levels of P protein ✓ (so) can produce / has higher levels of , melanin ✓ AVP ✓✓	**max 2**	e.g. *idea that* increased conversion of tyrosine to melanin e.g. mutation is unlikely to restore (inactive) enzyme
1	**(c)**	**(ii)**	(child is) able to convert tyrosine to melanin ✓ (child has) larger number of , melanosomes / melanocytes ✓ *OCA2* , is expressed / produces P protein ✓ alleles (that reduce amount of melanin) not present in (child with) brown eyes / AW ✓ AVP ✓	**max 2**	e.g. role of tyrosinase e.g. tyrosine to DOPA (and then melanin) e.g. maturation of pigment granules
1	**(d)**	**(i)**	*(injected with)* saline **OR** denatured antibody / AW **OR** non-specific antibody (for T lymphocyte) / AW ✓	**1**	**IGNORE** distilled water **IGNORE** placebo **DO NOT ALLOW** deactivated drug

1	**(d)**	**(ii)**	**FIRST CHECK ANSWER ON ANSWER LINE** **If answer = 3.1(25) x 10^5 (times more) award 2 marks** reading **both** correct values from graph: spleen = 5.0 x 10^7, cornea = 160 ✓ calculation: 5.0 x 10^7 ÷160 = 3.1(25) x 10^5 (times more) ✓	**2**	**For 1 mark** **ALLOW ECF** if incorrect values from graph **OR** 312500 **OR** incorrect standard form e.g. 31.25 x10^4
1	**(d)**	**(iii)**	increase in (number of) T (helper) memory cells after antibody treatment **OR** increase in (number of) T (killer) memory cells after drug treatment✓ (so) T cells in cornea not affected (by antibody/drugs) ✓ (so) T cells cannot have come from circulation ✓	**max 3**	**IGNORE** resident in tissues as in stem of question **ALLOW** comparison of numbers between control and treated for MP1 i.e. 28 and 48 for antibody / T helper i.e. 160 and ~230 for drugs / T killer **ALLOW** fewer / less / no ,T cells moving from circulation to cornea

Question			Answer	Marks	Guidance
2	(a)		(anterior) pituitary (gland) ✓ LH / luteinising hormone ✓ ovulation ✓ corpus luteum ✓	4	**DO NOT ALLOW** posterior pituitary **ALLOW** yellow body **DO NOT ALLOW** Graafian follicle
2	(b)		oestrogen inhibits (release of) FSH ✓	1	
2	(c)		binds to , zona pellucida / glycoprotein coat , of the secondary oocyte ✓ releases hydrolytic enzymes / digests the zona pellucida ✓	2	**DO NOT ALLOW** binds to membrane **DO NOT ALLOW** digests membrane

Question			Answer	Marks	Guidance
2	(d)		*stage*: anaphase , 1 / I ✓ *explanation*: homologous chromosomes / bivalents , separate / are pulled to poles ✓ *stage*: prophase , 1 / I ✓ *explanation*: homologous chromosomes pair up / bivalent formed / chiasma formation / cross(ing) over occurs ✓ *stage*: anaphase , 2 / II ✓ *explanation*: (sister) chromatids , separate / are pulled to poles ✓	**6**	**ALLOW** daughter chromosomes **DO NOT ALLOW** chromosomes

Question		Answer	Marks	Guidance
2	(e)*	Please refer to the marking instructions on page 4 of this mark scheme for guidance on how to mark this question. **Level 3 (5–6 marks)** A comprehensive description of features of meiosis **AND** features of fertilisation **AND** role of **BOTH** in increasing genetic variation. *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.* **Level 2 (3–4 marks)** A description that includes a feature of meiosis **and** a feature of fertilisation **and** a role of **either** in increasing genetic variation **OR** A description that includes feature**s** of meiosis **OR** feature**s** of fertilisation **and** a role of **either** in increasing genetic variation *There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.* **Level 1 (1–2 marks)** A description of a feature of meiosis **or** a feature of fertilisation **or** a role in increasing genetic variation. *There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.* **0 marks** *No response or no response worthy of credit.*	6	**Loss of communication mark for incorrect science** **e.g. incorrect role in genetic variation linked to incorrect feature** **Indicative scientific points may include:** ***Features of meiosis*** • reduction division / diploid to haploid • production of gametes • crossing over / chiasma formation • crossing over / chiasma formation in prophase I • independent / random assortment • independent/ random, assortment of chromosomes in metaphase I • independent / random assortment of chromatids in metaphase II • independent / random segregation • independent / random segregation of chromosomes in anaphase I • independent /random segregation of chromatids in anaphase II ***Role in increasing genetic variation*** ***Meiosis*** • 2^{23} different genetic combinations in gametes • new allele combinations • resulting in different allele combinations • exchange of genetic material / DNA • exchange of alleles between non-sister chromatids

Question		Answer	Marks	Guidance
				Features of fertilisation • random ovulation / release of oocyte • fusion of haploid gametes • ~300million sperm per ejaculation only one completes fertilisation ***Role in increasing genetic variation fertilisation*** • fertilisation is random process • restores diploid number • genetically different zygote produced

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>3</td><td>(a)</td><td></td><td>
<table>
<tr><th>Property of water</th><th>Description of how the property is important in biological systems</th></tr>
<tr><td>Is a polar solvent</td><td>transport of , (named) ions / solutes
OR
excretion / removal , of metabolic waste
OR
(medium for) chemical reactions</td></tr>
<tr><td>Has a high specific heat capacity</td><td>maintenance of (thermally) stable , internal / external , environment</td></tr>
<tr><td>Has a high latent heat of vaporisation</td><td>cooling effect of , sweating / panting</td></tr>
<tr><td>Has adhesive and cohesive properties</td><td>minimises friction / acts as lubricant
OR
maintains column of water in xylem</td></tr>
</table>
✓✓✓✓
</td><td>4</td><td>ALLOW transport of , dissolved / polar / hydrophilic / water soluble , molecules

ALLOW maintains temperature of aquatic habitats
IGNORE high heat energy required to change temperature of environment

ALLOW ‘continuous stream’ for column
IGNORE transpiration stream unqualified</td></tr>
</table>

Question			Answer	Marks	Guidance
3	(b)	(i)	blood plasma has higher concentration than tissue fluid because proteins , retained / cannot leave blood **ora** ✓ because (large) proteins cannot pass through , capillary wall / fenestrations / AW ✓ concentration in cytosol higher due to active , transport / uptake ✓ AVP ✓	**max 3**	**ALLOW** correctly named , solutes / electrolytes e.g. role of channel / carrier proteins in movement into and out of cytosol e.g. *idea that* (metabolic) reactions in cytosol , results in / requires , increased solutes (causing high concentration)
3	(b)	(ii)	(water moves) out of tissue fluid / into cytosol **AND** down water potential gradient / AW ✓	**1**	**ALLOW** from high(er) to low(er) water potential **ALLOW** Ψ for water potential

3	**(c)**	**(i)**	temperature ✓ would change the , height / volume / density , of solution ✓ **OR** height / volume , of solution at start ✓ to allow fair comparison of (pressure) measurements / AW ✓ **OR** duration / time ✓ to allow for , equilibration / equalisation ✓ **OR** type of partially permeable membrane / size of membrane pores ✓ to ensure , only water (molecules) pass through / solute (molecules) don't pass through ✓ **OR** diameter / radius , of tube ✓ to allow fair comparison of (pressure) measurements / AW ✓	**max 2**	**DO NOT ALLOW** concentration of solution
3	**(c)**	**(ii)**	use , a pressure gauge / manometer / data logger ✓	**1**	**DO NOT ALLOW** repeating and calculating a mean, as this would not affect individual measurements

3	**(c)**	**(iii)**	**FIRST CHECK THE ANSWER ON ANSWER LINE** **If answer = 0.3(148) (mol dm^{-3}) award 2 marks** rearrange equation c = osmotic pressure ÷ (iRT) ✓ correct substitution and evaluation: c = 780 ÷ (1 × 8.314 × 298) = 0.3148 (mol dm^{-3}) ✓	**2**	**ALLOW** for 1 mark 780 = c x 1 x 8.314 x 298 **OR** c = 780 ÷ (1 x 8.314 × 298)
3	**(c)**	**(iv)**	0.15(75) / 0.16 (mol dm^{-3}) ✓ no working needed	**1**	If answer is not 0.15(75) or 0.16 **ALLOW** ECF for candidate's answer to (iii) ÷ 2

4	**(a)**		*diagram showing:* drawing has clear continuous lines **and** covers 50% of the available space (of the box) ✓ no nuclear envelope ✓ chromatids are attached to spindle fibres (by centromeres) ✓ 4 V-shaped chromatids on each side being , separated / pulled to opposite poles ✓	**4**	
4	**(b)**		***Advantages max 2*** (some may) have fewer side-effects ✓ *idea of* used by both developed and non-developed countries ✓ can be used to , synthesise / develop (man-made / new / pro-) drugs ✓ ***Disadvantages max 2*** supplies may be limited ✓ harvesting may be , harmful to / kill , plants ✓ *idea that* removal of plants could lead to , habitat destruction / loss of biodiversity / extinction / AW ✓ (some plants) may be toxic / have unknown side effects ✓ (may have) low efficacy ✓	**max 3**	

4	**(c)**	**(i)**	randomised / randomly (assigned) ✓ to avoid bias / ensure representative groups ✓	**2**	**ALLOW** use random generator **ALLOW** matched for age **IGNORE** severity of disease / gender
4	**(c)**	**(ii)**	*greater efficacy because* (median) time to progression of disease is longer with topotecan ✓ 0.002 probability shows that difference (in progression) , is not due to chance / is (highly) significant ✓ (median) survival was longer on topotecan ✓ 0.515 shows difference (in survival) , could be due to chance / is not significant ✓	**max 3**	**ALLOW** *idea that* disease progressed more slowly / took longer to progress with topotecan **ALLOW** 0.002 is lower than 0.05 so difference is significant **ALLOW** 0.515 is greater than 0.05 so difference is not significant
4	**(c)**	**(iii)**	different methods of destroying (cancer) cells ✓ (so their) effect might be , additive / cumulative ✓	**2**	

5	**(a)**		(**P** is) depolarisation of atrium ✓ (**T** is) repolarisation of ventricle ✓	**2**	**ALLOW** atrial systole / contraction of atrium **ALLOW** ventricular diastole / relaxation of ventricle
5	**(b)**	**(i)**	**FIRST CHECK ANSWER ON ANSWER LINE** **If answer = 128 / 127.7 / 125 / 124.5 (beats min^{-1}) award 2 marks** 10 beats in 4.7s / 11 beats in 5.3s ✓ heart rate = (60 ÷ 4.7) × 10 = 128 (beats min^{-1}) **OR** (60 ÷ 5.3) × 11 = 125 (beats min^{-1}) ✓	**2**	**ALLOW** 120 for 2 marks (2 beats in 1s x 60s) **ALLOW** calculator value 127.65957 / 124.5283 correctly rounded **ALLOW** ECF if incorrect values used in calculation
5	**(b)**	**(ii)**	tachycardia ✓	**1**	
5	**(c)**	**(i)**	elevated S-T (segment / portion) ✓	**1**	**ALLOW** higher S-T
5	**(c)**	**(ii)**	during cardiac arrest / during fibrillation **OR** if patient hasn't responded to CPR / AW ✓ restore normal rhythm **OR** establish regular heartbeat / AW ✓	**max 2**	**ALLOW** e.g. stopping the heart during (transplant) surgery = 2 marks **IGNORE** heart attack / myocardial infarction

<table>
<tr>
<td>5</td>
<td>(d)</td>
<td></td>
<td>greater difference in heart rates at start / between 0 and 30s ✓

athletes had higher heart rate (throughout) ora ✓

athletes had steeper decrease in first 30 seconds ora ✓

both had , steady / similar , decrease after 30 seconds ✓

use of comparative figures in support ✓</td>
<td>Max 3</td>
<td>comparative figs:
<table>
<tr><td rowspan="2">Time(s)</td><td colspan="2">Natural log(ln) of heart rate (+/-) 0.01</td></tr>
<tr><td>athlete</td><td>patient</td></tr>
<tr><td>0</td><td>5.30</td><td>4.90</td></tr>
<tr><td>30</td><td>5.05</td><td>4.87</td></tr>
<tr><td>60</td><td>5.03</td><td>4.85</td></tr>
<tr><td>90</td><td>5.00</td><td>4.82</td></tr>
<tr><td>120</td><td>4.98</td><td>4.80</td></tr>
</table>
</td>
</tr>
</table>

6	**(a)**	**(i)**	Ishihara (colour test) ✓	**1**	**ALLOW** Farnsworth-Munsell (100 hue test)
6	**(a)**	**(ii)**	(receptors because) they , absorb / are stimulated by , light ✓ (transducers because) they convert <u>light</u> energy into <u>electrical</u> energy ✓	**2**	**ALLOW** absorbs photon(s) **ALLOW** detect light (stimulus) **DO NOT ALLOW** chemical energy

6	**(b)***	Please refer to the marking instructions on page 4 of this mark scheme for guidance on how to mark this question. **Level 3 (5–6 marks)** A description that includes statement**s** about physical protection **and** protection against light **and** chemical defences in the eye. *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.* **Level 2 (3–4 marks)** A description that includes statement**s** about physical protection **and** protection against light **OR** A description that includes statement**s** about physical protection **and** chemical defences in the eye **OR** A description that includes statement**s** about protection against light **and** chemical defences in the eye *There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.* **Level 1 (1–2 marks)** A description that includes a statement about physical protection **or** protection against light **or** chemical defences in the eye. *There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.* **0 marks** *No response or no response worthy of credit.*	**6**	**Loss of communication mark for e.g. incorrect science or incorrect use of terms** **Indicative scientific points may include:** ***Physical protection*** • location in orbit / bony socket (reduces damage) • blinking / reflex , to protect from , damage / entry of pathogens or particles • eyelashes to reduce entry of particles • collagen fibres / sclera , provide tough outer layer • conjuctiva covers the , cornea / surface • lachrymal gland secretes tears • lubrication by tears ***Protection against light*** • pupil reflex / constriction of pupil • widening of iris • role of radial muscles and circular muscles (in iris) • pigmentation of iris / choroid • role of choroid in preventing internal reflection (of light) • role of melanin e.g. absorbs harmful UV ***Chemical defences*** • lysozyme (in tears) • role of , lysozyme / enzyme in tears , in preventing infection • role of melanin in protection against free radicals / oxidative damage

7	**(a)**		ATP ✓ reduced NADP ✓	**2**	 **ALLOW** NADPH
7	**(b)**	**(i)**	as O_2 (concentration) increases less RuBP reacts with CO_2 ✓ more O_2 / less CO_2 , binds with (active site of) RuBisCO ✓ O_2 is a competitive inhibitor of RuBisCO / O_2 competes with CO_2 for RuBisCO ✓	**max 2**	**ALLOW** carbon dioxide for CO_2 and oxygen for O_2
7	**(b)**	**(ii)**	*at higher concentrations of O_2:* less , GP / TP , will be produced ✓ (so) less , sugars / (named) photosynthetic product produced ✓ less RuBP will be , regenerated / (re)formed (to combine with CO_2) ✓	**max 2**	 **ALLOW** e.g. glucose / sugar phosphates / citrate
7	**(c)**	**(i)**	**C D B A** ✓	**1**	

7	**(c)**	**(ii)**	(2x) GP is formed from RuBP and CO_2 ✓ GP is , reduced to form TP / converted to TP using reduced NADP ✓ (2x) TP forms glucose (phosphates) ✓ TP / glucose , converted to (named) amino acids ✓	**max 3**	**ALLOW** NADPH
7	**(c)**	**(iii)**	GP converted to acetyl CoA ✓ (aCoA is) converted to fatty acids ✓ TP converted to glycerol ✓ glycerol and fatty acids combine to make triglycerides ✓	**3**	**ALLOW** aCoA

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