CAMBRIDGE
International Education

Cambridge IGCSE™

MARINE SCIENCE **0697/21**

Paper 2 Theory and Practical Skills **May/June 2026**

MARK SCHEME

Maximum Mark: 80

Published

This mark scheme contains the instructions and marking guidance that our examiners used to mark candidate responses for this component.

Before they start marking, examiners complete a standardisation process. They review a range of candidate responses and discuss the mark scheme in detail to agree which answers can and cannot be accepted. Examiners award marks where it is clear that candidate responses have met the requirements of the mark scheme. These requirements may vary between different components or different versions of the same component, depending on the exact requirements of the question and the candidate responses seen during the standardisation process.

Sometimes, our mark schemes may allow marks to be awarded to responses which contain elements that are factually incorrect or for content not covered by the syllabus. We do this in response to the demands of a specific question to support candidates and make sure that our assessments are fair. However, these allowances should not be used as a guide for teaching and learning.

We cannot discuss the mark scheme with schools, and we recommend that schools read the mark scheme together with the assessment material and the Principal Examiner Report for Teachers.

This document consists of **18** printed pages.

© Cambridge University Press & Assessment 2026

https://xtremepape.rs/

General marking principles

All examiners must apply these marking principles when marking candidate responses.

1	Examiners must award marks for each response in line with: • the specific **content** defined in the mark scheme • the specific **skills** defined in the mark scheme or in the level descriptions • the **standard of response** required as exemplified by the standardisation scripts.
2	Examiners must award **whole marks** (not half marks, or other fractions).
3	Examiners must award marks **positively**. This means that: • marks are not deducted for errors or omissions • marks are awarded for correct/valid answers as defined in the mark scheme and also for **other valid answers** which go beyond the scope of the syllabus and mark scheme referring to your team leader as appropriate • the quality of spelling, punctuation and grammar are judged **only** when the mark scheme indicates that these features are **specifically assessed** in the question. However, the meaning of all responses must be unambiguous.
4	Examiners must **consistently** apply the requirements of the mark scheme and any rules for what to do when candidates have not followed instructions correctly.
5	Examiners must use the **full range of marks** defined in the mark scheme, unless limited by the quality of the candidate responses seen.
6	Examiners must award marks according to the mark scheme and **must not** award marks with grade thresholds or grade descriptions in mind.

© Cambridge University Press & Assessment 2026

https://xtremepape.rs/

Science-Specific Marking Principles

1	Examiners should consider the context and scientific use of any keywords when awarding marks. Although keywords may be present, marks should not be awarded if the keywords are used incorrectly.
2	The examiner should not choose between contradictory statements given in the same question part, and credit should not be awarded for any correct statement that is contradicted within the same question part. Wrong science that is irrelevant to the question should be ignored.
3	Although spellings do not have to be correct, spellings of syllabus terms must allow for clear and unambiguous separation from other syllabus terms with which they may be confused (e.g. ethane / ethene, glucagon / glycogen, refraction / reflection).
4	The error carried forward (ecf) principle should be applied, where appropriate. If an incorrect answer is subsequently used in a scientifically correct way, the candidate should be awarded these subsequent marking points. Further guidance will be included in the mark scheme where necessary and any exceptions to this general principle will be noted.
5	<u>'List rule' guidance</u> For questions that require ***n*** responses (e.g. State **two** reasons …): • The response should be read as continuous prose, even when numbered answer spaces are provided. • Any response marked *ignore* in the mark scheme should not count towards ***n***. • Incorrect responses should not be awarded credit but will still count towards ***n***. • Read the entire response to check for any responses that contradict those that would otherwise be credited. Credit should **not** be awarded for any responses that are contradicted within the rest of the response. Where two responses contradict one another, this should be treated as a single incorrect response. • Non-contradictory responses after the first ***n*** responses may be ignored even if they include incorrect science.

© Cambridge University Press & Assessment 2026

https://xtremepape.rs/

6	<u>Calculation specific guidance</u> Correct answers to calculations should be given full credit even if there is no working or incorrect working, **unless** the question states 'show your working'. For questions in which the number of significant figures required is not stated, credit should be awarded for correct answers when rounded by the examiner to the number of significant figures given in the mark scheme. This may not apply to measured values. For answers given in standard form (e.g. $a \times 10^n$) in which the convention of restricting the value of the coefficient (a) to a value between 1 and 10 is not followed, credit may still be awarded if the answer can be converted to the answer given in the mark scheme. Unless a separate mark is given for a unit, a missing or incorrect unit will normally mean that the final calculation mark is not awarded. Exceptions to this general principle will be noted in the mark scheme.
7	<u>Guidance for chemical equations</u> Multiples / fractions of coefficients used in chemical equations are acceptable unless stated otherwise in the mark scheme. State symbols given in an equation should be ignored unless asked for in the question or stated otherwise in the mark scheme.

© Cambridge University Press & Assessment 2026

https://xtremepape.rs/

Annotations guidance for centres

Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning
✓	correct point or mark awarded
✓ 1	correct point or mark awarded from marking point 1 similar numbered ticks are used for marking point 2, 3, 4 etc.
✗	incorrect point or mark not awarded
^	information missing or insufficient for credit
I	incorrect or insufficient point ignored while marking the rest of the response
BOD	benefit of the doubt given
ECF	error carried forward applied
CON	contradiction in response, mark not awarded
R	incorrect point or point not awarded
●	key point attempted / working towards marking point / incomplete answer / response seen but not credited / blank page seen

© Cambridge University Press & Assessment 2026

https://xtremepape.rs/

Annotation	Meaning
SEEN	point has been noted, but no credit has been given **or** blank page seen
	used to highlight parts of an extended response
	used to highlight parts of an extended response

© Cambridge University Press & Assessment 2026

https://xtremepape.rs/

Mark Scheme Abbreviations

;	separates marking points
/	separates alternative responses for the same marking point
Allow	accept the response
Ignore	ignore (mark as if this material was not present)
AND	indicates that two or more parts of a response are required for the mark
AVP	alternative valid point
AW	alternative wording (where responses vary more than usual)
OR	alternative responses for the same marking point
owtte	or words to that effect
underline	actual word given must be used by candidate (grammatical variants excepted)
ecf	error carried forward
ORA	or reverse argument
( )	the word / phrase in brackets is not required but sets the context
max	indicates the maximum number of marks
MP	marking point

© Cambridge University Press & Assessment 2026

https://xtremepape.rs/

Question	Answer	Marks	Guidance
1(a)(i)	Arctic (Ocean) ;	**1**	
1(a)(ii)	273 (days) ;;	**2**	time = distance / speed = 8 250 000 / 0.35 = 23 571 428.57 sec **OR** division by 0.35 ; **Allow** 272 for **1** mark
1(a)(iii)	*any **3** from:* 1 (after hatching) turtles may not be able to move out to sea / **AW** ; 2 difficult to swim against current / waste energy swimming against current / **AW** ; 3 turtles may not reach feeding grounds / **AW** ; 4 turtles may not return to beaches / may not return to shore they hatched in / go to wrong shore / cannot find shore they were hatched on / **AW** ; 5 so (females) cannot lay eggs / fewer eggs laid / fewer nests / **AW** ; 6 **AVP** ;	**3**	**Allow** current usually returns turtles to shores **Ignore** become disorientated **Allow** need to return to shore (hatched in) **Ignore** eggs destroyed e.g. different beach may have different conditions / more likely to be eaten by predators
1(b)(i)	*any **3** from:* 1 place (floating) object into water / **AW** ; 2 measure distance travelled / **AW** ; 3 measure time taken / **AW** ; 4 divide distance travelled by time taken **AND** repeat ;	**3**	**Allow** any correct object / knotted rope **Allow** how far it moves **Allow** measure time taken for object to move set distance **Ignore** formula unqualified

https://xtremepape.rs/

Question	Answer	Marks	Guidance
1(b)(ii)	1 (rip current that) would drag swimmers out to sea / **AW** ; *and any **2** from:* 2 must be able to swim / must be in a group / wear life jackets / under supervision / ensure life guards are present / **AW** ; 3 do not go into water / do not go close to the water's edge / **AW** ; 4 if caught in the current don't swim against the current / swim sideways / parallel to the coast to an area with less current / **AW** ; 5 select an alternative area / shore / **AW** ;	**3**	**Allow** other correct descriptions of being pulled out to sea **Allow** take appropriate safety equipment e.g. life buoy **Allow** let current allow you to drift

Question	Answer	Marks	Guidance
2(a)(i)	**K**: (air/gas) bladder / **AW** ; floats, kelp / blades, to obtain light / for photosynthesis / **AW** ; **M**: stipe ; support / holds kelp upright / gives rise to the blades / attaches to the blades / **AW** ;	**4**	**Ignore** air sack **Allow** any idea of float **Allow** prevent blocking light **Ignore** stem **Allow** attaches to holdfast **Allow** ecf for correct function from stem in first part of answer **Ignore** structure unqualified / hold kelp together / holds bladders / leaves

https://xtremepape.rs/

Question	Answer	Marks	Guidance
2(a)(ii)	initial measurement 8 mm to 9 mm **OR** 0.8 cm to 0.9 cm ; division by 0.5 ; correct unit ;	**3**	**Allow** any number of decimal places **Allow** 16 to 18 mm **OR** 1.6 to 1.8 cm for 2 marks ;;
2(b)(i)	1 both axes labelled **AND** with units ; 2 linear scales for both axes that cover at least half grid ; 3 correct plots (± half a square) ; 4 straight lines joining plots with no extrapolation ;	**4**	distance / cm **AND** time / s **Do not allow** non-linear scales
2(b)(ii)	*any pair from:* temperature (of the water) ; using water-bath / heat shield / **AW** ; **OR** light colour / light wavelength ; use filter on the lamp ; **OR** carbon dioxide concentration ; add (set amount of) hydrogen carbonate / **AW** ; **OR** **AVP** ; **AVP** ;	**2**	

https://xtremepape.rs/

Question	Answer	Marks	Guidance
2(b)(iii)	*any **3** from:* 1 (as light intensity decreases / distance increases) time taken increases / disc rises more slowly / **AW** / **ORA** ; 2 because (rate of) photosynthesis decreases ; 3 slower oxygen production / less oxygen produced / **AW** ; 4 oxygen gets trapped (in discs) / **AW** ; 5 reduces density of disc ; 6 other factors may limit the rate / **AW** ;	**3**	**Allow** takes longer to make the disc float **Allow** (gas) bubbles get trapped **Allow** named factors e.g. temperature / carbon dioxide

Question	Answer	Marks	Guidance
3(a)(i)	neat lines (no sketching) and no shading ; at least size of original ; proportions correct ; three antennae **AND** two eyes **AND** attachments to body ;	**4**	eyes must be widest and middle spike above other two
3(a)(ii)	*any **2** from:* exoskeleton ; compound eyes ; two pairs of antennae ; abdominal segments with jointed legs ;	**2**	**Allow** jointed legs

https://xtremepape.rs/

Question	Answer	Marks	Guidance
3(b)(i)	(aquaculture system) separated from open water / in tanks / **AW** ;	**1**	**Allow** separated from natural water / from sea / from ocean / separated from the wild / away from water bodies / **AW** **Do not allow** cages / nets
3(b)(ii)	*any **3** from:* 1 use water with different salinities / freshwater and saltwater / **AW** ; 2 place hydrometer into water / **AW** ; 3 record depth hydrometer sinks / observe depth in water / **AW** ; 4 same temperature / **AW** ; **OR** 1 use water with different salinities / freshwater and saltwater / **AW** ; 2 add dye to one / **AW** ; 3 drop dyed solution into other solution and record if it rises or sinks / **AW** ; 4 same temperature / **AW** ; **OR** 1 use water with different salinities / freshwater and saltwater / **AW** ; 2 measure mass of set volumes / volumes of set mass / **AW** ; 3 calculate density using mass ÷ volume ; 4 same temperature / **AW** ;	**3**	**Allow** other suitable objects **Allow** measure mass and measure volume

https://xtremepape.rs/

Question	Answer	Marks	Guidance
3(b)(iii)	*any **3** from:* 1 do not overfeed / give small amounts (fed) / **AW** ; 2 regular / frequent / **AW,** (feeding) ; 3 (high in) protein ; 4 use highly digestible food ; 5 use, insect-based food / fish off-cuts / plant based / **AW** ; 6 idea of not using open nets / feed in sealed tanks / **AW** ;	**3**	**Allow** stop when the shrimp stop eating the food **Ignore** feed enough nutrients to grow **Allow** feed at fixed times **Allow** lipid (in pellets) **Allow** correct balance of nutrients **Allow** sustainable food
3(b)(iv)	(reducing) sugar / glucose **AND**, protein;	**1**	**Do not allow** non-reducing sugar / sucrose

Question	Answer		Marks	Guidance
4(a)	**1a** colour of shell is white **1b** colour of shell is **brown**	shelled mollusc shell is a **turret shell** **go to 2**	**3**	any two correct parts for **1** mark any four correct parts for **2** marks
	2a number of shell parts is two **2b** number of shell parts is **one**	shelled mollusc shell is a **scallop** **go to 3**		
	3a shape of shell is spiral **3b shape of shell is flat**	shelled mollusc shell is a **topshell snail** shelled mollusc shell is a **cowrie**		**Allow 3a** and **3b** either way around
4(b)(i)	95 ; 95 / 5 = 19 ;		**2**	÷ 5

https://xtremepape.rs/

Question	Answer	Marks	Guidance
4(b)(ii)	19 × 250 = 4750 ;	**1**	**Allow** ecf from **4(b)(i)**
4(b)(iii)	*any **3** from:* 1 use random (coordinates) ; 2 method to select random coordinates ; 3 to avoid bias / **AW** ; 4 method to deal with shells on edges of quadrat, e.g. how to decide if on or out ; 5 do more replicates / **AW** ; 6 so sample is representative ;	**3**	**Allow** sample more than 5 areas / use more quadrats / wider area / ensure all areas assessed /use areas with no topshells **Allow** description of representative / why mean would have been inaccurate e.g. would be too high if only areas with topshells were selected

© Cambridge University Press & Assessment 2026

https://xtremepape.rs/

Question	Answer	Marks	Guidance
4(c)	*any **6** from:* 1 sample in areas with rocks and without rocks / areas with different rock sizes / **AW** ; 2 repeats / means / **AW** ; 3 take stated mass of (wet) sand / weigh sand / **AW** ; 4 heat and reweigh / **AW** ; 5 calculate difference in mass / percentage change in mass / **AW** ; 6 same time of day / same season / same weather / **AW** ; 7 same distance from (low) tide mark / shore / water edge / **AW** ; 8 same depth of sand ; 9 appropriate safety method ;	**6**	 **Allow** different numbers of rocks **Ignore** evaporate unqualified **Allow** change in mass

Question	Answer	Marks	Guidance
5(a)	*any **2** from:* constant / reliable / available, energy supply ; energy <u>dense</u> ; (relatively) cheap ; stable to, transport use ;	**2**	 **Allow** unaffected by weather

https://xtremepape.rs/

Question	Answer	Marks	Guidance
5(b)	*any **3** from:* using booms, to surround oil / to gather oil into one area / localise the oil / contain oil / prevent further spread / **AW** ; using skimmers, to remove oil / collect oil / **AW** ; burning (spilled) oil / **AW** ; **AVP** ;	**3**	
5(c)(i)	neat table with ruler drawn lines ; headings of time (carbon dioxide bubbled through) / minutes **AND** pH ; time in left-hand column ; order of values correct and all pH to one decimal place ;	**4**	**Allow** seconds for unit **Do not allow** units in body of table
5(c)(ii)	*any **3** from:* 1 (burning) fossil fuel releases carbon dioxide ; 2 there is a decrease in pH / lower pH, (with increased carbon dioxide) ; 3 levels off after 4 minutes / from 4 minutes water becomes acidic / **AW** ; 4 no direct evidence that it would have same effect in, oceans / marine systems / other factors would affect acidity in ocean / **AW** ; 5 no replicates ;	**3**	**Ignore** more acidic **Allow** smaller drop between 4 and 5 **Allow** only pH 6.4 / 6.5 are acidic / idea that water is only ever slightly acidic / only two values are acidic **Allow** carbon dioxide could come from other sources **Allow** different oceans could be affected differently

https://xtremepape.rs/

Question	Answer	Marks	Guidance
6(a)(i)	19 / 100 × 17 000 = 3230 (g) ; 3200 (g) ;	2	**Allow** ecf for incorrect unit conversion **Allow** 3.2 for 1 mark
6(a)(ii)	*any **2** of:* a compound has <u>elements</u> (chemically) combined / mixtures are not (chemically) combined, substances / elements / **AW** ; <u>elements</u> in a compound cannot be (easily / physically) separated / in a mixture substances can be (easily / physically) separated / **AW** ; the fertiliser is a mixture (of compounds) ;	2	**Allow** bonded / joined for combined **Ignore** fused **Allow** in a compound the elements are in fixed proportions / in a mixture the elements may not be in fixed proportions **Allow** named separation method, e.g. filtration
6(a)(iii)	*any pair from:* for bones / (fish) skeleton / (exo)skeletons / **AW** ; for muscle attachment / protection / support / strengthen / harden / **AW** ; **OR** teeth / **AW** ; for eating / defence / **AW** ; **OR** production of shells (for molluscs) ; for protection / **AW** ; **OR** for coral skeletons ; to provide a substrate / protection / support / **AW** ;	2	

https://xtremepape.rs/

Question	Answer	Marks	Guidance
6(b)	*any **5** from:* 1 fertiliser runs off into the sea / leaches / moves into water body / more nutrients in water / dissolves in rain / **AW** ; 2 nitrogen for, amino acid / protein / chlorophyll / DNA 3 <u>eutrophication</u> (occurs); 4 lack of light / light blocked / **AW** ; 5 algae cannot <u>photosynthesise</u> ; 6 (dead) algae decompose / **AW** ; 7 (increased) respiration by bacteria / decomposers) / less respiration by fish / **AW** ; 8 reduction in oxygen / high BOD / low oxygen / **AW** ;	**5**	**Allow** phosphorus for DNA / RNA / ATP / **AW** ; **Allow** other producers e.g. seagrass **Allow** other producers e.g. seagrass **Ignore** breakdown **Ignore** suffocate

https://xtremepape.rs/