



Bhutan Council for School Examinations and Assessment

Cambridge Aligned Curriculum

BIOLOGY

BCSE/11T2

Paper II

For examination from 2026

MARK SCHEME

Maximum Mark: 60

Specimen MS

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.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardization scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- 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
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- 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:

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.

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 'List rule' guidance (see examples below)

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.

6 Calculation specific guidance

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 Guidance for chemical equations

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.

Abbreviations used in the Mark Scheme

/alternative answers for the same marking point underline actual word given must be used by candidate (grammatical variants accepted)
(brackets) the word or phrase in brackets is not required, but sets the context

B marks: These are independent marks, which do not depend on other marks. For a **B** mark to be awarded, the point to which it refers must be seen specifically in the candidate's answer.

M marks: These are method marks upon which **A** marks later depend. For an **M** mark to be awarded, the point to which it refers must be seen specifically in the candidate's answer. If a candidate is not awarded an **M** mark, then the later **A** mark cannot be awarded either.

C marks: These are compensatory marks which can be awarded even if the points to which they refer are not written down by the candidate, providing subsequent working gives evidence that they must have known them. For example, if an equation carries a **C** mark and the candidate does not write down the actual equation but does correct working which shows the candidate knew the equation, then the **C** mark is awarded.

If a correct answer is given to a numerical question, all of the preceding **C** marks are awarded automatically. It is only necessary to consider each of the **C** marks in turn when the numerical answer is not correct.

A marks: These are answer marks. They may depend on an **M** mark or allow a **C** mark to be awarded by implication.

Examples of how to apply the list rule

State **three** reasons ... [3]

A

1. Correct	✓	2
2. Correct	✓	
3. Wrong	✗	

B (4 responses)

1. Correct, Correct	✓, ✓	3
2. Correct	✓	
3. Wrong	ignore	

C (4 responses)

1. Correct	✓	2
2. Correct, Wrong	✓, ✗	
3. Correct	ignore	

D (4 responses)

1. Correct	✓	2
2. Correct, CON (of 2.)	✗, (discount 2)	
3. Correct	✓	

E (4 responses)

1. Correct	✓	3
2. Correct	✓	
3. Correct, Wrong	✓	

F (4 responses)

1. Correct	✓	2
2. Correct	✓	
3. Correct CON (of 3.)	✗ (discount 3)	

G (5 responses)

1. Correct	✓	3
2. Correct	✓	
3. Correct Correct CON (of 4.)	✓ ignore ignore	

H (4 responses)

1. Correct	✓	2
2. Correct	✗	
3. CON (of 2.) Correct	(discount 2) ✓	

I (4 responses)

1. Correct	✓	2
2. Correct	✗	
3. Correct CON (of 2.)	✓ (discount 2)	

Question 1	Answer	Marks	Guidance
1. a.	Nucleus	1	
b.	<i>Any one from:</i> ✓ Control the movement of substance in and out of the cell ✓ Regulate the movement of substance in and out of the cell	1	
2.	A- Biofuel B- Bioremediation C- Reduce pollution / clean contaminated environment	3	Award 1 mark each for a correct answer
3.	✓ Substance X is a large or polar, so it cannot directly through the phospholipid bilayer. ✓ The carrier protein binds to the substance and changes shape to transport it across the membrane	2	1 mark each for a point
4.	✓ Vaccination stimulates the immune system to produce antibodies or memory cells. ✓ It provides protection against future infection. ✓ In this way, it helps to reduce the spread of the diseases in the community.	3	1 mark for each for a point

Question 2	Answer	Marks	Guidance
1. a.	✓ Windy	1	
b.	✓ High humidity	1	
c.	Any one from: ✓ High light intensity ✓ Wind ✓ High temperature	1	
2.	Green house A Reasons any two from: ✓ Light intensity is high which increases the rate of photosynthesis ✓ Carbon dioxide concentration is high which also increases the rate of photosynthesis ✓ Temperature is optimum ✓ Soil water is adequate	3	1 mark for choosing correct greenhouse (A) 2 marks for two correct reasons
3. a.	Root hair cell	1	
b.	✓ Transport water and mineral salts from roots to upper parts of the plant.	1	
4.	✓ Tidal volume increases during exercises. More oxygen is needed and more carbon dioxide must be removed, so larger volume of air is moved in and out of the lungs.	2	

Question 3	Answer	Marks	Guidance
1.	W- morula X- Blastula Y- Endometrium (Uterine lining)	3	1 mark for a correct answer
2.	✓ Hormone prevent the release of an egg (ovulation). ✓ It makes sperms more difficult to reach the egg or prevent implantation.	2	1 mark each for a point
3. a.	✓ Carpel (pistil)	1	
b.	Any one from: ✓ Protect flower bud before it blooms ✓ Occurs photosynthesis	1	
4.	✓ Cell X is haploid containing half the number of chromosomes. ✓ It is genetically non-identical to the other gametes ✓ It can fuse with another haploid gamete during fertilization to restore the diploid chromosome number.	3	1 mark for each correct point

Question 4	Answer	Marks	Guidance
1. a.	✓ Brain	1	
b.	✓ Transmit nerve impulses between the brain and the body/ acts as a reflex Centre.	1	
c.	✓ Peripheral nervous system (PNS)	1	
2.	A- Physical digestion/ mechanical digestion B- Chemical digestion C- Egestion	3	1 mark for a correct answer
3. a.	✓ Sensory neuron	1	
b.	✓ Produces a response by contracting effector (muscles) or release secrete from gland.	1	
4.	✓ The patient has a high blood urea concentration indicating that the kidneys are not removing waste effectively. ✓ The buildup of urea is toxic and may cause brain dysfunction (confusion) or disrupt osmotic (water) balance leading to swelling.	2	1 mark for each point

Question 5	Answer	Marks	Guidance
1. a.	✓ Ecosystem A	1	
b.	Any one from: ✓ Pollination ✓ Nutrient cycling ✓ Food web stability	1	
2. a.	✓ Decrease, Increase	1	Award 1 full mark only if both answers are correct
b.	✓ Increase	1	
3.	Biotic limiting factor: ✓ Food availability ✓ Competition ✓ Predation ✓ diseases Abiotic factors: ✓ Sunlight ✓ Space	3	3 marks if all answers are correct. 2 marks if 5 or 4 answers are correct 1 mark if 2 or 3 answers are correct
4. a.	✓ Exponential phase	1	
b.	✓ Stationary phase	1	
c.	✓ Death phase	1	

Question 6	Answer	Marks	Guidance
1. a.	R for dominant allele r for recessive allele	1	1 full mark only if both answers are correct
b.	The gametes are: R, r, R, r	1	1 full mark if only if four answers are correct
c.	The phenotypic ratio is 1:2:1	1	
2.a.	✓ injected antibodies provide immediate protection against the rabies viruses. ✓ They are ready made antibodies and do not need to be produced by the patient's immune system	2	1 mark for each point
b.	✓ the injection does not stimulate the production of memory cells, so protection is temporary/ no long-term immunity develops.	1	
3.	The correct sequence is: G, H, J, F and I	2	2 full marks if all four sequence are correct 1 mark if three or two sequence are correct
4.	✓ Speciation: introduce new species into an ecosystem ✓ Biodiversity: increase the stability of an ecosystem ✓ Food web: shows feeding relationship between organisms ✓ Ecosystem resilience: is the ability of an ecosystem to recover after disturbance	2	2 full marks if all answers are correct 1 mark if 2 or 3 answers are correct.