

FINAL



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

LIFE SCIENCES
COMMON ASSESSMENT TASK
MARCH 2025 TEST
MEMO

MARKS: 50

This marking guideline consists of 6 pages



PRINCIPLES RELATED TO MARKING LIFE SCIENCES MARCH 2025

1. **If more information than marks allocated is given**
Stop marking when maximum marks are reached and put a wavy line and 'max' in the right-hand margin.
2. **If, for example, three reasons are required and five are given**
Mark the first three irrespective of whether all or some are correct/incorrect.
3. **If whole process is given when only part of it is required**
Read all and credit relevant part.
4. **If comparisons are asked for and descriptions are given**
Accept if differences / similarities are clear.
5. **If tabulation is required but paragraphs are given**
Candidates will lose marks for not tabulating.
6. **If diagrams are given with annotations when descriptions are required**
Candidates will lose marks
7. **If flow charts are given instead of descriptions**
Candidates will lose marks.
8. **If sequence is muddled and links do not make sense**
Where sequence and links are correct, credit. Where sequence and links is incorrect, do not credit. If sequence **and** links becomes correct again, resume credit.
9. **Non-recognised abbreviations**
Accept if **first** defined in answer. If not defined, do not credit the unrecognized abbreviation but **credit the rest of answer** if correct.
10. **Wrong numbering**
If answer fits **into the correct** sequence of questions but the wrong number is given, it is acceptable.
11. **If language used changes the intended meaning**
Do not accept.
12. **Spelling errors**
If recognizable accept provided it does not mean something else in Life Sciences or if it is out of context.
13. **If common names given in terminology**
Accept provided it was accepted at the National memo discussion meeting.
14. **If only letter is asked for and only name is given (and vice versa)**
No credit

15. **If units are not given in measurements**
Candidates will lose marks. Memorandum will allocate marks for units separately
16. Be sensitive to the **sense of an answer, which may be stated in a different way.**
17. **Caption**
All illustrations (diagrams, graphs, tables, etc.) must have a caption
18. **Code-switching of official languages (terms and concepts)**
A single word or two that appears in any official language other than the learners' assessment language used to the greatest extent in his/her answers should be credited, if it is correct. A marker that is proficient in the relevant official language should be consulted. This is applicable to all official languages.

SECTION A**QUESTION 1**

1.1	1.1.1	B✓✓		
	1.1.2	D✓✓		
	1.1.3	C✓✓		
	1.1.4	D✓✓		
			(4 x 2)	(8)
1.2	1.2.1	Luteinising hormone✓/ LH		
	1.2.2	Non-disjunction✓		
	1.2.3	Cytokinesis✓		
			(3 x 1)	(3)
1.3	1.3.1	A only✓✓		
	1.3.2	B only✓✓		
			(2 x 2)	(4)
	1.4.1	(a) Centromere✓		(1)
		(b) Chromatid✓		(1)
	1.4.2	(a) Crossing over✓		(1)
		(b) Metaphase 1✓		(1)
	1.4.3	1✓		(1)
				(5)
			TOTAL SECTION A:	20

SECTION B**QUESTION 2**

2.1	2.1.1	(a) tRNA✓		(1)
		(b) mRNA✓		(1)
	2.1.2	Translation✓		(1)
	2.1.3	GAA✓		(1)
	2.1.4	- Brings specific amino acids✓		
		- to the ribosome✓		
		- For the formation of the required protein✓		(3)

- 2.1.5 - Different protein will be formed✓
 - since anticodon GGA✓/ DNA triplet GGA
 - changed to GUA✓/ DNA triplet GTA
 - and amino acid tyrosine✓
 - will be replaced by serine✓ in a protein
OR
 - Different / same protein will be formed✓
 - Since anticodon GGA will change✓
 - to anticodon GUA✓
 - Bringing different / same amino acid✓ Any (3)
(10)
- 2.2 2.2.1 Man 2✓ (1)
- 2.2.2 - Some(three) black bars of Susan's DNA profile correspond with that of the mother✓
 - The remaining (two) black bars of Susan's DNA profile correspond with that of Man 2✓ (2)
- 2.2.3 DNA of each individual is unique, except in the case of identical twins✓
(Mark the first ONE only) (1)
- 2.2.4 - To identify criminals✓/ resolve disputes
 - To identify organisms from their remains✓/dead bodies
 - To identify family relationships other than paternity✓ e.g. siblings
 - To diagnose genetic disorders✓
 - To establish matching tissues✓/for tissue typing Any (1)
(Mark the first ONE only) **(5)**
- QUESTION 3**
- 3.1 3.1.1 Zinc supplement✓ (1)
- 3.1.2 50 (healthy) males in each group ✓participated in the investigation
(Mark the first ONE only) (1)
- 3.1.3 - Type of zinc supplement✓
 - Concentration of zinc✓/ Volume of zinc Any (1)
(Mark the first ONE only)
- 3.1.4 - Group B did not receive the zinc supplement✓
 - If testosterone level increases in group A, it will be due to zinc supplement✓ (2)
- 3.1.5 $639.4 - 348.4$ ✓
 $= 291$ ✓ (2)
(7)

- | | | | |
|-----|-------|---|-------------------|
| 3.2 | 3.2.1 | (a) Oestrogen✓ | (1) |
| | | (b) Progesterone✓ | (1) |
| | 3.2.2 | 14✓ | (1) |
| | 3.2.3 | As the structure C / corpus luteum degenerates✓ the level of hormone B /progesterone decreases✓ | (2) |
| | 3.2.4 | - There will be no thickening of the endometrium✓
- for the implantation / attachment of embryo✓ | (2) |
| | 3.2.5 | No inhibition of pituitary gland from producing FSH✓
(Mark the first ONE only) | (1)
(8) |

TOTAL SECTION B: 30

GRAND TOTAL: 50

GRADE 12 Alternatives

Q2.1.5

- The codon CCU code for same amino acid/tyrosine as DNA triplet GGA✓
- The codon CCU changed to codon CAU which code for same amino acid/serine as the DNA triplet GTA✓
- Therefore, the amino acid serine will replace tyrosine✓
- Resulting with the different protein formed✓

Q2.2.3

- DNA cannot be altered✓

Q2.2.4

- Tracing of ancestry✓

Q3.1.2

- 100 men divided into two equal groups✓

Q3.1.4

- To verify that zinc supplement is the only cause of increasing the level of testosterone in group A✓

Q3.2.4

- May results in no stimulation of pituitary gland to release more LH✓
- resulting ovulation not taking place✓

Q3.2.5

- It will result in the endometrium breaking down✓/there will be no further development of the endometrium/endometrium will no longer be maintained.

OR

- FSH level will increase✓
- stopping further thickening of endometrium✓
- Implantation will not take place✓

