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# SA EXAM PAPERS

SA EXAM PAPERS  
Proudly South African

**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**



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**Proudly South African**

**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)	<b>(8)</b>
1.2	1.2.1	Luteinising hormone✓/ LH		
	1.2.2	Non-disjunction✓		
	1.2.3	Cytokinesis✓		
			(3 x 1)	<b>(3)</b>
1.3	1.3.1	A only✓✓		
	1.3.2	B only✓✓		
			(2 x 2)	<b>(4)</b>
	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)
				<b>(5)</b>
<b>TOTAL SECTION A:</b>				<b>20</b>

**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 <b>C</b> / corpus luteum degenerates✓ the level of hormone <b>B</b> /progesterone decreases✓ | (2)               |
|     | 3.2.4 | - There will be no thickening of the endometrium✓<br>- for the implantation / attachment of embryo✓           | (2)               |
|     | 3.2.5 | No inhibition of pituitary gland from producing FSH✓<br><b>(Mark the first ONE only)</b>                      | (1)<br><b>(8)</b> |

**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✓

