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# **KWAZULU-NATAL PROVINCE**

**EDUCATION**  
REPUBLIC OF SOUTH AFRICA

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**LIFE SCIENCES**

**COMMON TEST**

**MARCH 2023**

**MARKING GUIDELINES**

**MARKS: 60**

**This memorandum consists of 6 pages**

**PRINCIPLES RELATED TO MARKING LIFE SCIENCES SEPTEMBER 2022**

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	D✓✓		
	1.1.2	B✓✓		
	1.1.3	A✓✓		
			(3 x 2)	<b>(6)</b>
1.2	1.2.1	Peptide✓bond		
	1.2.2	Ribosome✓		
	1.2.3	Testosterone✓		
			(3 x 1)	<b>(3)</b>
1.3	1.3.1	B only✓✓		
	1.3.2	Both A and B✓✓		
	1.3.3	A only✓✓		
			(3 x 2)	<b>(6)</b>
1.4	1.4.1	(a) B✓		(1)
		(b) C✓		(1)
		(c) - A✓		(1)
		- B✓		(1)
	1.4.2	External✓fertilisation		(1)
				<b>(5)</b>
			<b>TOTAL SECTION A:</b>	<b>20</b>

**SECTION B**

**QUESTION 2**

2.1	2.1.1	CAU✓		(1)
	2.1.2	- Determines the sequence of mRNA bases✓ - to provide coded message✓/sequence of amino acids - for the formation of a particular protein✓	Any	(2)
	2.1.3	(a) Threonine✓		(1)
		(b) ATG✓		(1)
				<b>(5)</b>

- 2.2 - The double helix DNA unwinds✓  
 - The double-stranded DNA unzips✓/weak hydrogen bonds break to form two separate strands  
 - Both strands are used as templates✓  
 - to form complimentary DNA strands✓  
 - using free DNA nucleotides from the nucleoplasm✓/Adenine pairing with thymine and cytosine pairing with guanine  
 - Two identical DNA molecules are formed✓  
 - Each molecule consists of one new strand and one original strand✓ Any (6)
- 2.3 2.3.1 (a) Homologous chromosome✓pair (1)  
 (b) Spindle fibre✓ (1)
- 2.3.2 - Due to non-disjunction during Anaphase II✓  
 - Two chromatids moved to one pole in one cell✓  
 - and none moved to the other pole of the cell✓ Any (2)  
 (4)  
 [15]

**QUESTION 3**

- 3.1 3.1.1 Mitosis (1)
- 3.1.2 No halving of chromosome number✓ (1)  
**(Mark the first ONE only)**
- 3.1.3 B✓ (1)  
**(3)**
- 3.2 3.2.1 Fertilisation✓ (1)
- 3.2.2 Foetus will not receive nutrients and oxygen✓ from the placenta (1)  
**(Mark the first ONE only)**
- 3.2.3 - Oestrogen✓  
 - thickens the endometrium✓  
 - in preparation for the implantation✓  
 - Progesterone✓  
 - Further thickens endometrium✓  
 - to maintain pregnancy✓ Any (2 x 2) (4)  
**(6)**

3.3	3.3.1	FSH level✓		(1)
	3.3.2	To increase reliability✓ <b>(Mark the first ONE only)</b>		(1)
	3.3.3	- Only non-pregnant females were used✓ - Females of the same age✓ - Groups of equal number✓/10 - Duration of the treatments was 6 months <b>(Mark the first ONE only)</b>	Any	(1)
	3.3.4	B✓		(1)
	3.3.5	- Trilostane decreases the production of progesterone✓ - and no inhibition of pituitary gland✓ - from producing FSH✓	Any	(2) <b>(6)</b> <b>[15]</b>
<b>TOTAL SECTION B:</b>				<b>30</b>
<b>GRAND TOTAL:</b>				<b>50</b>