FINAL

KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

LIFE SCIENCES

PROVINCIAL STANDARDISED ASSESSMENT

MARCH 2026

MARKING GUIDELINE

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MARKS: 100

This marking guideline consists of 9 pages.

PRINCIPLES RELATED TO MARKING LIFE SCIENCES MARCH 2026

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

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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	A✓✓		
	1.1.3	D✓✓		
	1.1.4	C✓✓		
	1.1.5	C✓✓		
	1.1.6	A✓✓	(5 x 2)	**(12)**
1.2	1.2.1	Double helix✓		
	1.2.2	Chiasma✓		
	1.2.3	Ovulation✓		
	1.2.4	Cytokinesis✓		
	1.2.5	Umbilical artery✓	(5 x 1)	**(5)**
1.3	1.3.1	None✓✓		
	1.3.2	A only✓✓		
	1.3.3	Both A and B✓✓	(3 x 2)	**(6)**
1.4	1.4.1	(a) Middle piece✓/neck		(1)
		(b) Tail✓		(1)
	1.4.2	(a) B✓ Nucleus✓		(2)
		(b) A✓ Acrosome✓		(2)
		(c) C✓ Middle piece✓/ neck		(2) **(8)**
1.5	1.5.1	(a) Chromosome✓		(1)
		(b) Spindle fibre✓		(1)
		(c) Cell membrane✓		(1)
	1.5.2	X✓ Centromere✓		(2)

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1.5.3 Anther✓ (1)

1.5.4 (a) 6✓ (1)

(b) 3✓ (1)

1.5.5 Metaphase II✓ (1)
(9)

TOTAL SECTION A: 40

SECTION B

QUESTION 2

2.1 2.1.1 (a) Hydrogen✓ bond (1)

(b) Thymine✓ (1)

2.1.2 DNA replication✓ (1)

2.1.3 - Doubles genetic material✓/ DNA
- Ensures that daughter cells are genetically identical✓ Any (1)
(Mark the first ONE only)

2.1.4

Transcription	DNA Replication
One strand is used as a template✓	Both strands are used as templates✓
mRNA is formed✓	Identical DNA molecules are formed✓
RNA nucleotides are used✓	DNA nucleotides are used✓
Adenine pairs with uracil✓	Adenine pairs with thymine✓
Short section of DNA molecule is used✓ / unzips	The whole DNA molecule is used✓ / unzips

(Mark the first TWO only) Any (2 x 2) + (1) table✓ (5)
(9)

2.2 2.2.1
- Identifying relatives✓
- Paternity testing✓
- Identifying genetic disorders✓
- Identifying dead persons✓
- Trace missing persons✓
- Matching tissues for organ transplants✓

(Mark the first TWO only) Any (2)

2.2.2 (a) 35✓% (1)

(b) 10✓% (1)

2.2.3
- DNA samples from the crime scene and suspect are used✓
- to form a DNA profile✓
- If the DNA profile of the suspect matches the one found at the crime scene, then the suspect was at the crime scene✓

OR

- DNA samples from the crime scene and suspect are used✓
- to form a DNA profile✓
- If the DNA profile of the suspect does not match the one found at the crime scene, then the suspect was not at the crime scene✓ (3)

(7)

2.3 2.3.1 (a) Transcription✓ (1)

(b) Val✓ (1)

2.3.2
- Molecule X has thymine✓
- Molecule Z has uracil✓

- Molecule X is double stranded✓
- Molecule Z is single stranded✓

- Molecule X is long✓
- Molecule Z is short✓

- Molecule X is double stranded✓
- Molecule Z is single stranded✓

- Molecule X has deoxyribose sugar✓
- Molecule Z has ribose sugar✓

(Mark the first ONE only) Any (2)

2.3.3 (a) CTG✓ (1)

(b) CUG✓ (1)

2.3.4
- Different protein is formed✓
- since codon CUG changed to CUA✓
- that matches anticodon GAU✓
- Bringing leu instead of a different amino acid✓ Any (3)

2.3.5
- Each tRNA carries a specific amino acid✓
- When the anticodon on the tRNA✓
- matches the codon on the mRNA✓
- then tRNA brings the required amino acid to the ribosome✓
- Amino acids become attached to each other by peptide bonds✓
- to form the required protein✓ Any (5)

(12)
[30]

QUESTION 3

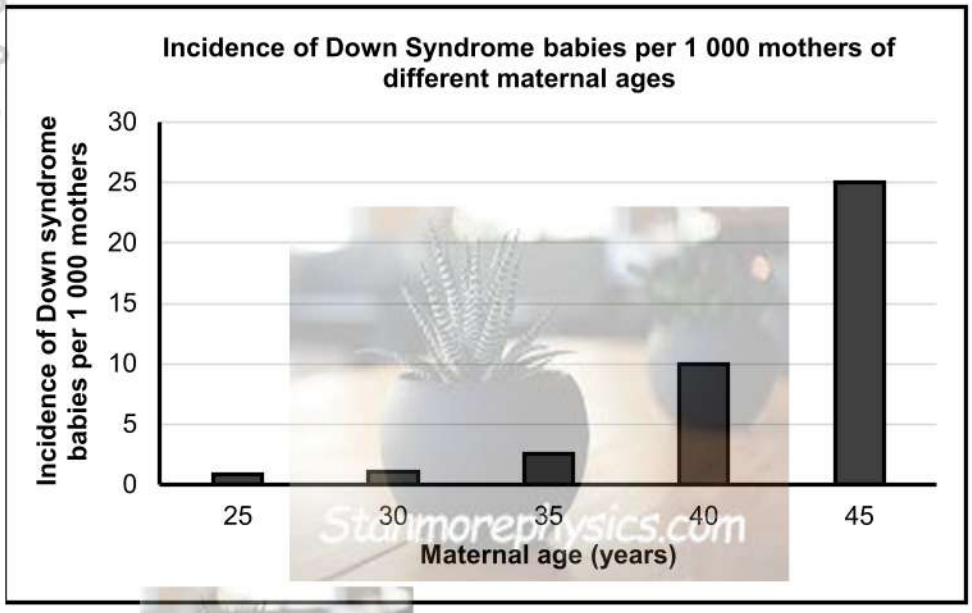
3.1 3.1.1 Anaphase I✓ / II (1)

3.1.2 As the maternal age increases, the incidence of down syndrome babies per 1 000 mothers increases✓✓ (2)

3.1.3 $\frac{(25 - 2.5)}{2.5}$ ✓ x 100✓

= 900✓ % (3)

3.1.4



Guideline for assessing the graph

CRITERIA	ELABORATION	MARK
Correct type of graph **(T)**	Bar graph drawn	1
Caption of graph **(C)**	Both variables included	1
Axes labels **(L)**	X and Y-axis correctly labelled with units	1
Scale for X and Y axes **(S)**	- Equal space and width of bars for X-axis and - Correct scale for Y-axis	1
Plotting of co-ordinates **(P)**	- 1 to 4 co-ordinates plotted correctly - ALL 5 co-ordinates plotted correctly	1 2

(6)
(12)

Histogram or line graph drawn
- Lose marks for type of graph and for scale

Transposed axes:
- Can get full credit, if axes labels are swapped and bars are horizontal
- If labels are not corresponding, then lose marks for labels and scale
- Check that the plotting is correct for the given labels

3.2 3.2.1 Fertilised eggs develop outside the mother's body until birth✓✓

OR

Eggs are fertilised internally and develop outside the mother's body until birth✓✓ (2)

3.2.2 (a) Fish✓ (1)

(b) Chicken✓ (1)

3.2.3 (a) - Increases the chances of fertilisation✓
- to compensate for the loss of gametes✓/ protection of gametes (2)

(b) - Ova are fertilised inside the mother's body✓to ensure that
- gametes are protected from predators✓ / harsh environmental conditions
- and allows high survival rate✓ Any (2)
(8)

3.3 3.3.1 Clomid✓treatment (1)

3.3.2 - Age✓
- Female with the same form of infertility✓
- Dosage of 50 mg in group A✓
- Measurements taken from days 5 - 9 of the menstrual cycle✓ Any (2)
(Mark the first TWO only)

3.3.3 To obtain a baseline measurement✓ (1)

3.3.4 - 8 females in each group participated✓
- Procedure was done over a period of 5 months✓/ 5 consecutive days from day 5 – 9 of the menstrual cycle (2)
(Mark the first TWO only)

3.3.5 (a) To show that the changes in FSH levels are due to clomid treatment only✓✓ (2)

(b) Clomid treatment increases the level of FSH in women with infertility✓✓ (2)
(10)
[30]

TOTAL SECTION B: 60
GRAND TOTAL: 100

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