



education

Department:
Education
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

**LIFE SCIENCES P1
SEPTEMBER 2026
MARKING GUIDELINES**

MARKS: 150

These marking guidelines consist of 8 pages.

PRINCIPLES RELATED TO MARKING LIFE SCIENCES

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 a part of it is required**
Read all and credit relevant part.
4. **If comparisons are asked for but 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 are incorrect, do not credit. If sequence and links become correct again, resume credit.
9. **Non-recognised abbreviations**
Accept if first defined in answer. If not defined, do not credit the unrecognised 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 the answer, 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 Provincial memo discussion meeting.

14. **If only the letter is asked for but only the name is given (and vice versa)**
Do not credit.
15. **If units are not given in measurements**
Candidates will lose marks. Marking guidelines 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, drawings, tables, etc.) must have a caption.
18. **Code-switching of official languages (terms and concepts)**
A single word or two that appear(s) 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.
19. **Changes to the marking guidelines**
No changes must be made to the marking guidelines without consulting the Provincial Chief Marker who in turn will consult with the Provincial Internal Moderator.
20. **Official marking guidelines**
No changes may be made to the marking guidelines without this having been discussed with the Provincial DCES and Provincial Internal Moderator.

SECTION A**QUESTION 1**

1.1	1.1.1	A✓✓		
	1.1.2	B✓✓		
	1.1.3	B✓✓		
	1.1.4	D✓✓		
	1.1.5	C✓✓		
	1.1.6	C✓✓		
	1.1.7	B✓✓		
	1.1.8	A✓✓		
	1.1.9	C✓✓	(9 x 2)	(18)
1.2	1.2.1	Semicircular canals✓		
	1.2.2	Thorns✓/spines		
	1.2.3	Apical dominance✓		
	1.2.4	Eustachian tube✓		
	1.2.5	Grommet✓/tympanostomy tube		
	1.2.6	Cerebellum✓		
	1.2.7	Conjunctiva✓		
	1.2.8	Vasodilation✓		
	1.2.9	Oestrogen✓	(9 x 1)	(9)
1.3	1.3.1	B only✓✓		
	1.3.2	A only✓✓		
	1.3.3	B only✓✓	(3 x 2)	(6)
1.4	1.4.1	A quick, automatic response to a stimulus✓ without a conscious thought✓/not involving the brain.		(2)
	1.4.2	(a) Grey matter✓		(1)
		(b) Synapse✓		(1)
	1.4.3	(a) B✓ Sensory neuron✓		(2)
		(b) C✓ Interneuron✓		(2)
	1.4.4	Pain✓/thorn prickle		(1)
	1.4.5	Peripheral✓ nerves		(1)
				(10)
1.5	1.5.1	Pancreas✓		(1)
	1.5.2	Glucagon✓		(1)
	1.5.3	• Muscle✓ cells		
		• Liver✓ cells		(2)
	1.5.4	Diabetes✓ mellitus		(1)
	1.5.5	• Thyroxine✓		
		• Adrenaline✓		(2)
				(7)

TOTAL SECTION A: 50

SECTION B**QUESTION 2**

- | | | | |
|-----|-------|--|-------------|
| 2.1 | 2.1.1 | Motor✓neuron | (1) |
| | 2.1.2 | (a) Myelin sheath✓ | (1) |
| | | (b) Cell body✓/nucleus | (1) |
| | | (c) Axon✓ | (1) |
| | 2.1.3 | - (Motor neuron) transmits impulses✓
- from CNS✓/interneuron
- to effectors✓/muscles/glands | (3) |
| | 2.1.4 | - Ensure that impulses travel in one direction only✓
- Ensure that impulses are transmitted from sensory neuron to motor neuron✓
- Prevents continuous stimulation of neurons✓ | (3) |
| | | | (10) |
| 2.2 | 2.2.1 | Accommodation✓ | (1) |
| | 2.2.2 | (Retina) converts light stimulus into an impulse✓ | (1) |
| | 2.2.3 | The yellow spot has only cones✓/no rods | (1) |
| | 2.2.4 | - The ciliary muscle contracts✓
- The suspensory ligaments slacken✓
- Tension on the lens decreases✓/the lens becomes more convex
- Increases the refractive power of the lens✓
- A clear image is formed on the retina✓/yellow spot | (4) |
| | | Any 4 | (7) |
| 2.3 | 2.3.1 | (a) Menstrual cycle✓/ovarian cycle | (1) |
| | | (b) (Graafian) follicle✓ | (1) |
| | | (c) Ovulation✓ | (1) |
| | | (d) Menstruation✓ | (1) |
| | 2.3.2 | - Oestrogen✓ thickens the endometrium✓/makes it glandular and vascular
- Progesterone✓ maintains the endometrium✓/makes it thicker/more glandular and vascular | (4) |
| | 2.3.3 | No✓ | (1) |

- 2.3.4
- Thin/no endometrium✓/menstruation has occurred
 - which means no implantation✓
 - of the blastocyst✓ could take place
- OR**
- Absence of the blastocyst✓/embryo
 - indicates that no implantation✓
 - occurred in the endometrium✓
- (3)

- 2.3.5
- High levels of progesterone✓
 - inhibits secretion of FSH✓/LH
 - Which means no new follicle will mature✓
 - therefore, no ova is available for fertilisation✓/no ovulation takes place
- (4)
(16)

T✓

		Ovipary	Vivipary	
2.4	2.4.1	(a) External and internal✓	Internal✓ only	(2)
		(b) Nutrients from yolk✓	Nutrients from mother via placenta✓	(2)
		(c) Low survival rate✓	High survival rate✓	(2)

Table
(1)
(7)

- 2.5
- 2.5.1 A rare condition that affects the face and eye on one side of the body✓ (1)

- 2.5.2
- neck injury✓
 - stroke✓
 - brain problems✓
 - surgery accidentally affecting nerves✓
- (Mark first TWO only)** Any 2 (2)

- 2.5.3
- Reduce/cannot activate normal “fight or flight” responses✓/have a negative impact because
 - it limits the ability to regulate body temperature✓
- Reduced sweating✓
 - means less cooling off of the body✓
- When the body temperature increases✓
 - due to increased metabolic rate under stress✓
- (Mark first TWO only)** Any 2 x 2 (4)

- 2.5.4
- Causes a smaller pupil size✓/miosis/constriction of the pupil
 - which allows less light✓to enter the eye
 - making it more difficult to see in the dark✓
- (3)
(10)
[50]

QUESTION 3

- | | | | | |
|-----|-------|-----|--|--------------------|
| 3.1 | 3.1.1 | (a) | (Altered) thyroxin levels✓ | (1) |
| | 3.1.1 | (b) | A thermometer✓ and a digital metabolic chamber✓ | (2) |
| | 3.1.2 | | <ul style="list-style-type: none"> - food✓ - water✓ - housing✓ - light/dark cycle✓ | |
| | | | (Mark first TWO only) | Any 2 (2) |
| | 3.1.3 | | <ul style="list-style-type: none"> - low body temperature✓ - slow metabolism✓ - weight gain✓ - fatigue✓ | |
| | | | (Mark first TWO only) | Any 2 (2) |
| | 3.1.4 | | <ul style="list-style-type: none"> - Synthetic thyroxin increased metabolism✓/cellular respiration - which raise/increase oxygen use✓ | (2) |
| | 3.1.5 | | Thyroxin increases (both) body temperature and metabolic rate✓✓ in mice | (2)
(11) |
| 3.2 | 3.2.1 | | It is a medical procedure used to destroy the endometrium to reduce/stop heavy menstrual bleeding✓ | (1) |
| | 3.2.2 | | To treat heavy menstruation when other treatments fail✓ | (1) |
| | 3.2.3 | | <ul style="list-style-type: none"> - The endometrium is needed for implantation✓ of a fertilised egg - Ablation destroys the endometrium✓ - Implantation becomes impossible✓/leads to infertility - Without the endometrium pregnancy is impossible✓ | (3) |
| | 3.2.4 | | <ul style="list-style-type: none"> - FSH✓/follicle stimulating hormone - Stimulates follicle development✓ - LH✓/Luteinising hormone - Stimulates ovulation✓/the conversion of Graafian follicle to corpus luteum | (4)
(9) |

3.3.1	(a)	Auxin✓	(1)
	(b)	Gravity✓	(1)
3.3.2		Geotropism✓	(1)
3.3.3		Roots bend✓downward✓/toward gravity.	(2)
3.3.4		- Auxin accumulates on the lower side of the root✓ - Inhibits growth in the lower side of the roots✓ - Stimulates cell elongation/division in the upper side of the root✓/upper side grows faster - The root bends/grows downwards✓/grows in the direction of gravity	(4) (9)
3.4	3.4.1	(a) S✓	(1)
		(b) R✓	(1)
	3.4.2	- R has the highest number of sperms✓ - With the lowest % of inactive sperms✓ - With the lowest % of misformed sperms✓ Any 2	(2)
	3.4.3	$\frac{50}{100} \checkmark \times 23 \checkmark$ $= 11,5 \checkmark \text{ million/cm}^3 \checkmark$	(4)
	3.4.4	Seminiferous tubules✓ → Epididymis✓ → Vas deferens✓ → Urethra✓/via ejaculatory duct	(4)
	3.4.5	- mucus for lubrication✓/transport medium - nutrients/fructose for energy✓ - alkaline fluid to neutralise the acid✓ in vagina	(3) (15)
3.5		- (Osmo)receptors✓detects low blood water levels - The hypothalamus✓ stimulates - The pituitary gland✓ - To secrete more ADH✓ - Which causes the renal tubules✓/the collecting ducts to become more permeable - more water is reabsorbed✓ into the blood vessels of the kidney - Less water is released in the urine✓/urine is more concentrated - The water levels return to normal✓/increase Any 6	(6) (6) [50]

TOTAL SECTION B: 100
GRAND TOTAL: 150