



education

MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

**LIFE SCIENCES P1
SEPTEMBER 2026
MARKING GUIDELINES**

MARKS: 150

This marking guideline consists of 12 pages.

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PRINCIPLES RELATED TO MARKING LIFE SCIENCES

1. **If more information than marks allocated is given**
Stop marking when maximum marks is 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 the relevant part.
4. **If comparisons are asked for but descriptions are given**
Accept if the 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 the 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 recognisable, accept the answer, provided it does not mean something else in Life Sciences or if it is out of context.
13. **If common names are 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**
Marking guidelines will allocate marks for units separately, except where it is given in the question.
16. **Be sensitive to the sense of an answer, which may be stated in a different way.**
17. **Caption**
All illustrations (diagrams, sketches, graphs, 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. This is applicable to all official languages.
19. **Changes to the memorandum**
No changes must be made to the marking guideline without consulting the subject advisor. who in turn will consult with the internal moderator.

SECTION A**QUESTION 1**

- | | | | | |
|-----|--------|--|---------|-------------------|
| 1.1 | 1.1.1 | A ✓✓ | | |
| | 1.1.2 | C ✓✓ | | |
| | 1.1.3 | D ✓✓ | | |
| | 1.1.4 | B ✓✓ | | |
| | 1.1.5 | C ✓✓ | | |
| | 1.1.6 | C ✓✓ | | |
| | 1.1.7 | B ✓✓ | | |
| | 1.1.8 | B ✓✓ | | |
| | 1.1.9 | C ✓✓ | | |
| | 1.1.10 | D ✓✓ | 10 x 2 | (20) |
| 1.2 | 1.2.1 | Chorion✓ | | |
| | 1.2.2 | Puberty✓ | | |
| | 1.2.3 | Gametogenesis✓ | | |
| | 1.2.4 | Adrenalin✓ | | |
| | 1.2.5 | Apical dominance✓ | | |
| | 1.2.6 | TSH✓/ Thyroid stimulating hormone | | |
| | 1.2.7 | Cerebellum✓ | | |
| | 1.2.8 | Glycogen✓ | | |
| | 1.2.9 | parasympathetic✓nervous system | (9 x 1) | (9) |
| 1.3 | 1.3.1 | B only ✓✓ | | |
| | 1.3.2 | A only ✓✓ | | |
| | 1.3.3 | A only ✓✓ | | |
| | 1.3.4 | B only ✓✓ | (4 x 2) | (8) |
| 1.4 | 1.4.1 | Internal✓ fertilization | | (1) |
| | 1.4.2 | Altricial✓ | | (1) |
| | 1.4.3 | - They are vulnerable✓
- blind✓
- hairless ✓ | Any | (2) |
| | 1.4.4 | - They feed their young by giving them concentrated milk✓
- By sweating it out ✓/through their sweat glands | | (2)
(6) |

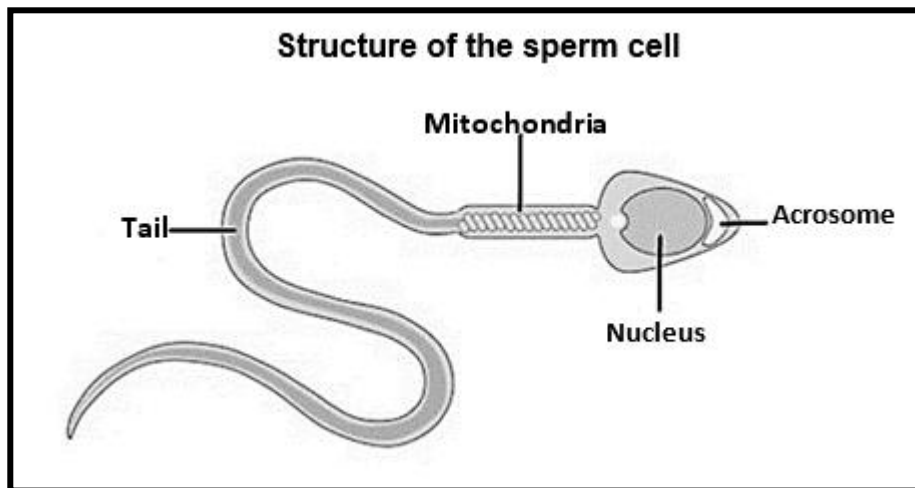
- 1.5 1.5.1 Cervix✓ (1)
- 1.5.2 - Acts as a birth canal✓
- Receive sperms cells✓ during copulation
Any (1)
- 1.5.3 (Part) B✓ (1)
- 1.5.4 Oogenesis✓ (1)
- 1.5.5 - Part A/ Fallopian tube only allows the passage of an ovum✓
- Which has no effect✓ on the menstrual cycle
- Since it is controlled by hormones✓
- Which are transported by blood✓
Any (3)
(7)

TOTAL SECTION A: 50

SECTION B**QUESTION 2**

- 2.1 2.1.1 (a) Epididymis✓ (1)
 (b) cells of leydig✓ / Germinal epithelium (1)
 (c) Seminiferous tubules✓ (1)
- 2.1.2 (a) Carries/ transport the sperm cells✓ from the epididymis into the ejaculatory duct. (1)
 (b) Provide nutrients for the developing sperm cells✓ (1)

2.1.3



Description	Mark allocation
Caption (C)	✓
Drawing (D)	✓
Any 2 labels(L)	✓✓

(4)

- 2.1.4 - Sperms are not going to be produced normally✓,
 - leading to low sperm count✓. (2)
(11)

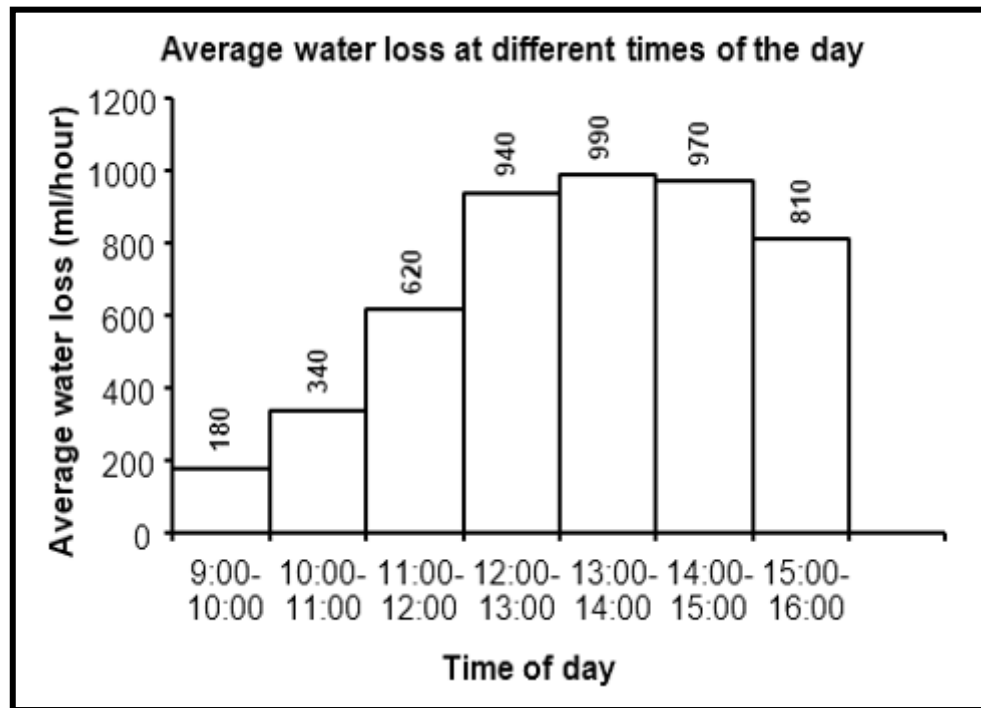
- 2.2 2.2.1 Luteinising hormone✓/ LH (1)
- 2.2.2 Day 17 - 28 ✓ (accept Day 16 – 28) (1)
- 2.2.3 **Negative feedback mechanism✓***
- Increased levels of hormone **D**✓/ progesterone will inhibit✓the pituitary gland from secreting hormone **A**✓/ follicle stimulating hormone
 - When levels of hormone **D**/ Progesterone decreases✓,
 - then hormone **A**/ follicle stimulating hormone will be secreted from the pituitary gland✓
 - and its level increases ✓ **1*compulsory mark + Any 3** (4)
- 2.2.4 - Under the influence of FSH✓/ follicle stimulating hormone,
 - the follicle in the ovary grows and matures✓ into the graafian follicle.
 - approximately on day 14 the matured Graafian follicle burst open,
 - and releases the ovum✓, the process is known as ovulation.
 - under the influence of LH✓,
 - the remains of the Graafian follicle will be converted to corpus luteum✓
- Any (3)
(9)
- 2.3 2.3.1 Gestation – the period of development of the foetus in the uterus from conception until birth✓ (1)
- 2.3.2 A – Placenta✓
 B - Umbilical cord✓ (2)
- 2.3.3 - Provides watery medium for the foetus to move freely✓ and develop/ allows movement for growth and development✓
 - Prevents dehydration of the embryo✓
 - Protects the foetus against temperature fluctuation✓/Keeps foetus at a constant temperature
 - Acts as shock absorber✓
- Any (2)
- 2.3.4 Allantois ✓
 Yolk sac✓ (2)
- 2.3.5 Excretory system✓, respiratory system✓, digestive system✓, endocrine system✓
- Any (2)
(9)

2.4	2.4.1	Time after injection✓		(1)
	2.4.2	- Health status✓ - Age✓ - Gender✓ - Diet✓ - Fitness levels✓ - Blood glucose levels ✓	Any	(1)
	2.4.3	22✓ hours		(1)
	2.4.4	NPH✓		(1)
	2.4.5	Insulin reduces blood glucose levels✓ by increasing ✓the glucose absorption by cells.		(2)
	2.4.6	High glucose absorption will cause more glucose to enter the cells✓ and therefore cause a decrease in blood glucose levels✓		(2)
				(8)
2.5		- After consuming more salt, the salt levels in the blood increased above normal - Receptors in the kidney✓ detected the increase - And stimulated the adrenal gland✓ - Adrenal gland secreted less aldosterone✓ - Loop of Henle/ renal tubules became less permeable✓ - Less salt was reabsorbed back into the blood stream✓ - More salt was excreted✓ - Salt levels decreased back to normal	Any	(4)
				[50]

2.6 2.6.1 Gland – Hypothalamus✓
Hormone - ADH✓/ antidiuretic hormone (2)

2.6.2 (13:00 – 14:00)✓ (1)

2.6.3



Guideline for assessing the graph

CRITERIA	ELABORATION	MARK
Correct type of graph (T)	Histogram 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-axis (S)	- Same width of bars for X-axis and - Correct scale for Y-axis	1
Plotting of bars (P)	1 to 4 bars plotted correctly All 5 bars plotted correctly	1 2

(6)
(9)
[50]

QUESTION 3

3.1 3.1.1 November✓ (1)

- 3.1.2 - The concentration of abscisic acid increases✓
 - To stimulate the abscission✓ /falling of leaves
 - To prepare the tree for dormancy✓ (3)

- 3.1.3 - Less sunlight✓/ less water/ cold conditions therefore
 - Decreased photosynthesis✓/ reduced transpiration/ lower energy demand/ low growth rate
Mark first ONE only Any (1 x 2) (2)
(6)

- 3.2 3.2.1 -Transmits impulses✓from receptors to the brain ✓
 -Transmits impulses ✓ from the brain to effectors ✓
 -It helps coordinate muscle movements and balance ✓ by transmitting impulses between the brain and body. ✓
Mark first ONE only (Any 1 x 2) (2)

- 3.2.2 - Synapse ✓*
 -It ensures that the impulse moves in one direction only✓
 -It prevents continuous stimulation of the neurons✓
 -It ensures that the impulse is transmitted from the sensory neuron to the motor neuron ✓***Compulsory mark + any TWO** (3)

3.2.3

B/ Sensory neuron	D/ Motor neuron
Unipolar✓	Multipolar✓
Enter the spinal cord via the dorsal root✓	Exit spinal cord via ventral root✓

Table ✓+ (2 x 2) (5)
(10)

3.3	3.3.1	Right ✓ side	(1)
	3.3.2	Decreased pupil size ✓/drooping eyelid /decreased sweating Mark first ONE only	(1)
	3.3.3	Cerebrum✓	(1)
	3.3.4	Autonomic ✓ nervous system	(1)
	3.3.5	As pupil is too small it cannot dilate enough to let more light in ✓ there is a greater risk of having an accident at night ✓, because it will be difficult to see in the dark ✓/dim light.	Any (2)
	3.3.6	Accommodation ✓* – Ciliary muscles contract ✓ – Suspensory ligaments slacken ✓ – Tension on the lens decreases ✓ – Lens becomes more convex ✓ – Increasing the refractive power of the lens ✓ – Forming a (clear) image on the retina ✓ 1* compulsory + Any 3	(4) (10)
3.4	3.4.1	(a) Medulla oblongata✓	(1)
		(b) Cerebellum✓	(1)
	3.4.2	A → C → F✓✓	(2)
	3.4.3	- It conducts impulses between the brain and the receptors/ effectors✓ - Serves as a reflex centre for actions ✓ such as blinking, sneezing, coughing etc.	(2)
	3.4.4	Between the two hemispheres of the cerebrum✓✓	(2)
	3.4.5	(a) - Part D/ medulla oblongata which controls breathing✓ - was not injured✓	(2)
		(b) - The learner (occasionally) lost balance✓ - due to no coordination of voluntary movements✓ by part F	(2) (12)

- 3.5 3.5.1 (a) Ossicles✓ (1)
- (b) Cochlea✓ (1)
- 3.5.2 – Sound waves cannot be (effectively) converted to vibrations by the eardrum✓/tympanic membrane
 – and the ossicles will not vibrate ✓/vibrate less
 – therefore, the oval window will not vibrate ✓/vibrates less
 – no/little pressure waves form✓ in the cochlea
 – The Organ of Corti will pick up little or no stimulus ✓
 – and little or no impulse will be carried by the auditory nerve ✓
 – with little or no interpretation occurring in the cerebrum✓ Any (5)
- 3.5.3 $\frac{78 - 15}{78}] \times 100$ ✓
 = 80.8 %✓ (3)
- 3.5.4 - After 12 months, the person could hear normal✓✓(0 – 25dB)/
 -The person can hear 15 dB (2)
(12)
[50]

TOTAL SECTION B: 100
GRAND TOTAL: 150