education

Department:
Education
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

LIFE SCIENCES P1

SEPTEMBER 2025

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 11 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 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.

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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.

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SECTION A

QUESTION 1

1.1	1.1.1	A✓✓			
	1.1.2	C✓✓			
	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	B✓✓		(9 x 2)	**(18)**
1.2	1.2.1	Apical dominance✓			
	1.2.2	Choroid✓			
	1.2.3	Synapse✓			
	1.2.4	Peripheral nervous system			
	1.2.5	Gibberellin✓			
	1.2.6	Astigmatism✓			
	1.2.7	Alzheimer's✓disease			
	1.2.8	Concave lense✓		(8 x 1)	**(8)**
1.3	1.3.1	A only✓✓			
	1.3.2	None✓✓			
	1.3.3	B only✓✓		(3 x 2)	**(6)**
1.4	1.4.1	(a)	Abscisic acid✓		(1)
		(b)	Auxin✓		(1)
		(c)	Gibberellin✓		(1)
	1.4.2	(a)	Geotropism✓		(1)
		(b)	Phototropism✓		(1)
	1.4.3	(a)	Gravity✓		(1)
		(b)	Light✓		(1) **(7)**

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1.5	1.5.1	Urethra✓		(1)
	1.5.2	- The uterus has (thick) muscular✓ walls - The uterus can change shape✓/size - The inner lining (endometrium) thickens✓/becomes more vascular/glandular **(Mark first TWO only)**	Any	(2)
	1.5.3	(a) D✓ - testis✓		(2)
		(b) G✓ - ovary✓		(2)
	1.5.4	(a) Epididymis✓		(1)
		(b) Fallopian tube✓		(1)
		(c) (Graafian) follicle✓		(1)
		(d) Prostate gland✓/seminal vesicle/Cowper's gland		(1) **(11)**

TOTAL SECTION A: 50

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SECTION B

QUESTION 2

2.1	2.1.1	Acrosome✓	(1)
	2.1.2	Haploid✓	(1)
	2.1.3	**The haploid nucleus of the sperm:** - It is formed through meiosis✓ - to half the chromosome number✓ - to prevent doubling of chromosome number during fertilisation✓ Any	(2)
	2.1.4	For movement✓/swimming of the sperm	(1)
	2.1.5	- Under the influence of testosterone✓ - Diploid (germinal epithelium) cells✓ in the seminiferous tubules of the testis✓ - Undergo meiosis✓ - To form four haploid sperm cells✓	(5) **(10)**
2.2	2.2.1	Tubal ligation✓	(1)
	2.2.2	- No passage of a sperm cell to the ovum✓/no passage of an ovum into uterus - therefore, no fusion of gametes✓/no fertilisation - causing no formation of an embryo✓/infertility/sterility Any	(3) **(4)**
2.3	(a)	- The blood vessels on the skin constrict✓ - Less blood flows to the skin✓ - resulting in less heat being lost✓	(3)
	(b)	- The sweat glands become less active✓ - and produce less sweat✓ - resulting in less heat being lost✓	(3) **(6)**
2.4	2.4.1	When a fertilised egg implants and grows outside of the uterus' main cavity✓	(1)
	2.4.2	- On the ovary✓ - In the fallopian tube✓ - In the cervix ✓ - In the abdominal cavity✓ Any	(2)

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2.4.3 - The fallopian tube is too narrow✓/small space
- It is not flexible✓
- Cannot accommodate the growing foetus✓
- which can cause miscarriage✓*/death of the embryo
Any 1 + compulsory mark (2)

2.4.4 (a) Placenta✓ (1)

(b) Chorionic villi✓
Endometrium✓ (2)

2.4.5 - It acts as protection✓
- against shock absorption✓/mechanical injury

- It keeps the foetus hydrated✓
- to promote movement✓/swallowing

- It allows free movement of the foetus✓
- to help muscle development✓

- Keeps the temperature in a narrow range✓
- to protect against extreme temperature fluctuations✓
Any 2 x 2 (4)

2.4.6 - Gestation is the period from fertilisation to birth✓
- the zygote develops into an embryo✓/morula and blastocyst
- The embryo develops into a foetus✓
- this takes approximately 40 weeks✓/9 months (4)
(16)

2.5 2.5.1 The process of maintaining a constant, internal environment✓(within narrow limits) despite changes that take place internally and externally✓ (2)

2.5.2 Liver✓ (1)

2.5.3 (a) Pituitary gland✓/hypophysis (1)

(b) The skin✓ (1)

(c) Muscle✓cells/Liver cells (1)

2.5.4 - Secretes aldosterone✓
- which works with ADH✓
- to bring about water balance✓ (3)

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2.5.5
- The medulla oblongata/part in organ F is stimulated✓
- and sends impulses to the breathing muscles✓/part in organ B
- the rate of breathing increases✓
- the depth of breathing increases✓
- More carbon dioxide is exhaled✓/removed from the blood
- decreasing the blood carbon dioxide levels✓ (5)

(14)
[50]

QUESTION 3

3.1 3.1.1 (a) To examine the effect of age on the ability to hear higher frequencies of sound✓✓ (2)

(b) Age group✓
Frequency of sound✓ (2)

(c)
- The same testing environment✓
- The same equipment calibration✓
- The same number of males and females from each group✓
- The same test procedure✓ Any (1)

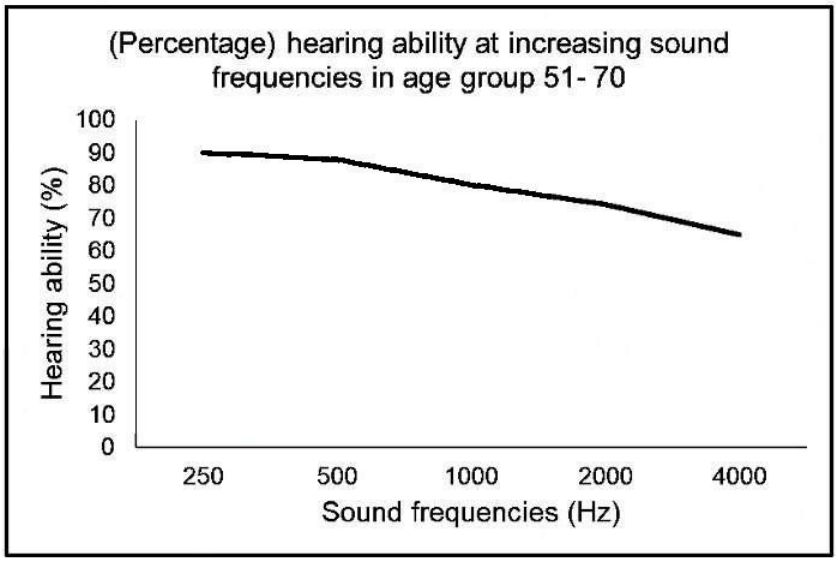
3.1.2
- Hearing ability was measured using an audiometer✓
- which emitted sound frequencies at varying pitches✓
- Participants responded to each frequency✓
- the percentage of correctly heard frequencies was recorded for analysis✓ Any (3)

3.1.3 As age increases, the ability to hear higher frequencies decreases✓✓ (2)

3.1.4
- four groups of 16 participants were used✓
- the measurements for each participant was done three times✓ (2)

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3.1.5



Guideline for assesssing the graph

CRITERIA		ELABORATION	MARK
Correct type of graph	**(T)**	**Line graph drawn**	1
Caption of graph	**(C)**	**Both variables, percentage and sound frequencies**	1
Axes labels	**(L)**	**X- and Y axis correctly labelled with units**	1
Scale for X- and Y-axis	**(S)**	**Correct scale for X and Y axis**	1
Plotting of co-ordinates	**(P)**	**1 to 3 points plotted correctly** **4 to 5 points plotted correctly**	1 2

(6)
(18)

3.2 3.2.1 Eustachian tube✓ (1)

3.2.2 Absorbs excess pressure waves✓/prevent echoes/ prevent sound distortion (1)

3.2.3 1 ⇨2 ⇨5 ⇨4✓✓ (2)

3.2.4 **Change in speed and direction the head:**
- causes the endolymph to move✓
- the cristae✓ in the ampulla is stimulated✓
- and convert the stimuli to impulse✓
- which is transmitted by auditory nerve✓
- to the cerebellum✓
- cerebellum sends the impulses to the skeletal muscle✓/effector (5)

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3.2.5
- No/less sound waves will be transmitted to the tympanic membrane✓
- The tympanic membrane/ossicles/oval window will not vibrate✓/have less vibrations
- No/less pressure waves are formed in the inner ear/cochlea/on the organ of Corti✓
- resulting in no hearing✓*/distorted hearing

Any 3 + compulsory mark (4)
(13)

3.3
- The receptor of the skin receives the stimulus✓
- converts it to an impulse✓
- the sensory neuron transmits the impulse✓
- to the interneuron in the spinal cord✓
- which transmits the impulse to the motor neuron✓
- which transmits it to the skeletal muscles✓/effectors (5)

(5)

3.4 3.4.1 A network of glands that produce hormones essential for maintaining homeostasis✓ (1)

3.4.2
- Hypothyroidism✓
- Hyperthyroidism✓ (2)

3.4.3
- Controls metabolic rate✓
- Regulates energy production✓
- Controls growth and development✓
- Maintain nervous system function✓

Any (2)

3.4.4 **If thyroxin level is higher than normal**:
- Pituitary gland/hypophysis is stimulated✓
- to secrete less TSH✓
- which stimulates the thyroid gland✓
- to secretes less thyroxin✓
- Thyroxin level decreases✓ (5)

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3.4.5 **If thyroxin levels remain low for too long:**

- It causes a lower metabolic rate✓/cellular respiration
- which leads to lower energy production✓/chronic fatigue/can cause the body temperature to drop

OR

- It causes a slower metabolism✓
- that leads to more energy being stored as fat✓/causing weight gain

OR

- It causes the body temperature to drop✓
- causing individuals to feel cold more often✓

OR

- It causes less growth hormone secretion✓
- which stunts growth✓/slow mental/sexual development

Any 2 x 2 (4)

(14)

[50]

TOTAL SECTION B: 100

GRAND TOTAL: 150

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2025 PREPARATORY EXAMINATION ERRATA/ADDITIONS & ADJUSTMENTS TO MARKING GUIDELINES

SUBJECT	**Life Sciences**	**PAPER**	**1**
DATE	**19 September 2025**	**TIME OF ERRATA**	**16H50 – 18H50**
QUESTION	**1.2.4(ENG) & 3.2.4 (AFR)**	**MARKS**	
QUESTION	**2.4.3**	**MARKS**	
QUESTION	**2.4.6**	**MARKS**	
QUESTION	**2.5.4**	**MARKS**	
QUESTION	**3.1.5**	**MARKS**	
	TOTAL MARKS FOR THE PAPER AFTER ADJUSTMENT		**0**
NO ADJUSTMENTS TO MARKS – MARKS ARE NOT AFFECTED IN ANY QUESTION.			

REPLACE THE ANSWERS OR WRITE ADDITIONS OR ADJUSTMENTS ON THE TABLE BELOW:

NUMBER	SUB QUESTION	CORRECTIONS/ADDITIONS/ADJUSTMENTS	MARKS
1.2.	1.2.4	**Indicate tick mark on:** Peripheral✓ **(English)**	(1)
3.2	3.2.4	Krista✓ **(Afrikaans)**	(1)
2.4.	2.4.3	- The fallopian tube is too narrow✓/small space - It is not flexible✓/cannot stretch - Cannot accomodate the growing foetus✓ **- No placenta✓/endometrium/blood vessels** **- to provide nutrients✓/oxygen** - which can cause miscarrige✓*/death of the embryo Any 1 + compulsory mark - Die fallopiusbuise is te smal✓/klein spasie - Dit is nie rekbaar nie✓ - Kan nie die groeiende fetus akkomodeer nie✓ **- Geen plasenta✓/endometrium/bloedvate** **- om voedingstowwe/suurstof te voorsien nie✓** - Kan 'n miskraam✓*/dood van embrio veroorsaak Enige 1 + verpligte punt	(2) (2)

2.4	2.4.6	- Gestation is the period from fertilistion to birth✓ - The zygote develops into an embryo✓ - **the zygote develops into a morula✓ and** - **a morula develops into a blastocyst which is implanted✓** - The embryo then develops into a foetus✓ - **foetus becomes a baby✓** - This takes approximately 40 weeks✓/9 months Any 4 - Gestasie is die periode vanaf bevrugting tot geboorte✓ - Die sigoot ontwikkel in 'n embrio✓ - **die sigoot ontwikkel in 'n morula✓ en** - **die morula ontwikkel in 'n blastula/blastosist wat geimplanteer✓ word** - Die embrio ontwikkel dan in 'n fetus ✓ - **die fetus word dan 'n baba✓** - Dit neem ongeveer 40 weke✓/9 maande Enige 4	(4) (4)
2.5	2.5.4	- Uses ADH - to regulate the water content - and aldosterone✓ - **which regulates salt content✓** - **by changing permeability of the renal tubules✓ Any 3** - Gebruik ADH - om die hoeveelheid water te reguleer - En aldosteroon✓ - **wat die hoeveelheid soute reguleer✓** - **deurdat dit die deurlaatbaarheid van die nierbuisies verander✓** **Enige 3**	(3) (3)
3.1	3.1.5	If a histogram or bar graph is drawn instead of a line graph, marks will be lost for: • Type of graph • Scale If axes are transposed: • Can get all marks if labels are swopped and points are correct • If labels are not corresponding, then: ➢ marks will be lost for labels and scale ➢ Plotting can get credit if coordinates are correct for given labels As 'n histogram of staafgrafiek getrek is, sal punte verloor word vir: • Tipe grafiek • Skaal As asse omgeruil is: • Kry al die punte as byskrifte ook omgeruil is • As die byskrifte nie ooreenstem nie dan: ➢ sal punte verloor word vir byskrifte en skaal ➢ Plot van punte kry punte as die koördinate korrek is vir gegewe byskrifte	(6) (6)
		TOTAL MARKS AFFECTED	0