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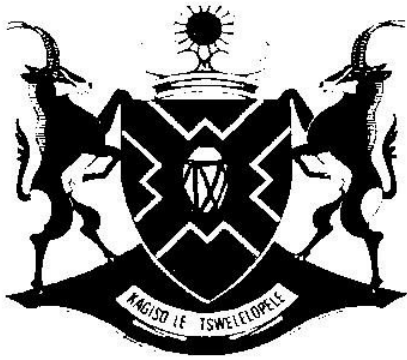
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Education
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REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

**LIFE SCIENCES P1
SEPTEMBER 2025
MARKING GUIDELINES**

MARKS: 150

These marking guidelines consist of 11 pages.

SA EXAM PAPERS



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.



**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) Absciscic 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) |





- | | | | |
|-----|-------|---|-------------|
| 1.5 | 1.5.1 | Urethra✓ | (1) |
| | 1.5.2 | <ul style="list-style-type: none"> - 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



**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)





- 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)





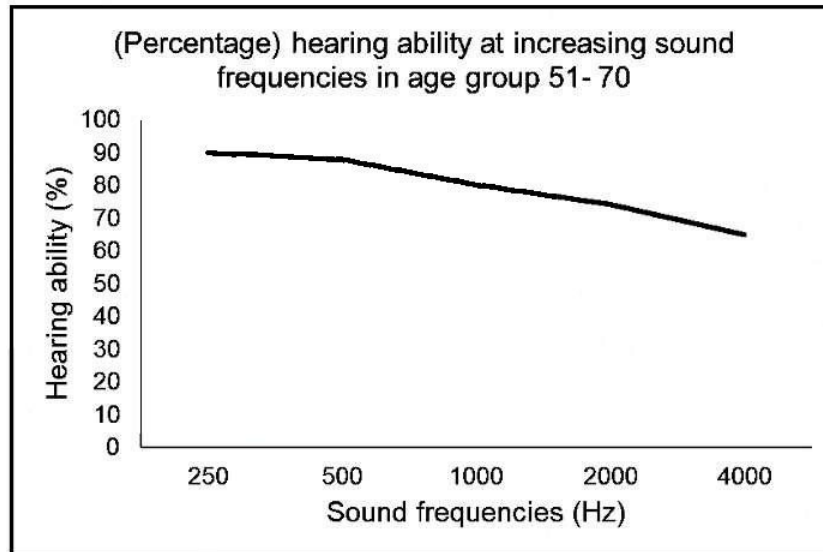
- 2.5.5
- The medulla oblongata/part in organ F is stimulated✓
 - and sends impulses to the breathing muscles✓/part in organ B
 - the rate of breathing increases✓
 - the depth of breathing increases✓
 - More carbon dioxide is exhaled✓/removed from the blood
 - decreasing the blood carbon dioxide levels✓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



3.1.5



Guideline for assessing 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)





- 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 secrete less thyroxin✓
 - Thyroxin level decreases✓
- (5)





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 miscarriage✓*/death of the embryo Any 1 + compulsory mark - Die fallopiusbuisie 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)



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2.4	2.4.6	- Gestation is the period from fertilisation 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	(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)
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	(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)
3.1	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 swapped 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)
		SA EXAM PAPERS AFFECTED	0





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