

MARKING GUIDELINES

EXAMINATION NATIONAL SENIOR CERTIFICATE	
GRADE	12
DATE	MAY/JUNE 2026
SUBJECT	LIFE SCIENCES
PAPER	1
MARK TOTAL	150
DURATION (HOURS)	2½
NUMBER OF PAGES	12



SOUTH AFRICAN COMPREHENSIVE ASSESSMENT INSTITUTE
SUID-AFRIKAANSE KOMPREENSIEWE ASSESSERINGSINSTITUUT

FINAL APPROVED MARKING GUIDELINES	
DATE OF MEETING	
UMALUSI MODERATOR	
CHIEF MARKER	
INTERNAL MODERATOR	



GUIDELINES FOR MARKING LIFE SCIENCES 2026

- 1. If more information than marks allocated is given**
Stop marking when maximum marks are reached. 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 the whole process is given when only part of it is required**
Read all and credit relevant part.
- 4. If asked for comparisons and descriptions are given**
Accept if differences/similarities are clear.
- 5. If tabulation is required but paragraphs are given**
Candidate will lose marks for not tabulating.
- 6. If diagrams are given with annotations when descriptions are required**
Candidate will lose marks.
- 7. If flow charts are given instead of descriptions**
Candidate 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 only if first defined in an answer. If not defined, do not credit the unrecognised abbreviation, but credit the rest of the answer if correct.
- 10. Wrong numbering**
If the answer fits into the correct sequence of questions and it was only incorrectly numbered, it is acceptable if the answer is correct.
- 11. If language used changes the intended meaning**
Do not accept.
- 12. Spelling errors**
If recognisable, accept, provided it does not mean something else in Life Sciences or if it is out of context.



13. If common names are given instead of scientific terminology

Accept, provided it was accepted at the national marking guidelines discussion meeting.

14. If only letters are asked for and only names are given (and vice versa)

No 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, but could still be correct.

17. Headings and captions

All illustrations (diagrams, sketches, graphs, tables, etc.) must have headings or captions.

18. Code-switching of official languages (terms and concepts)

A single word or two that appears in any official language other than the learner's 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. This usually occurs where a candidate's language of tuition is not the same as their home language or where they find themselves in a double medium tuition setup.

19. No changes may be made to any marking guidelines without consulting the SACAI MAIN EXAMINER and the SACAI MODERATOR, and where applicable, the UMALUSI MODERATOR.



SECTION A

QUESTION 1

1.1

1.1.1 B ✓✓

1.1.2 D ✓✓

1.1.3 D ✓✓

1.1.4 A ✓✓

1.1.5 B ✓✓

1.1.6 C ✓✓

1.1.7 C ✓✓

1.1.8 B ✓✓

1.1.9 B ✓✓

(9x2) **(18)**

1.2

1.2.1 Cochlea ✓

1.2.2 Vasodilation ✓

1.2.3 Absciscic acid ✓

1.2.4 Iodine ✓

1.2.5 Sclera ✓

1.2.6 Corpus luteum ✓

1.2.7 Fallopian ✓ tube

1.2.8 Homeostasis ✓

1.2.9 Prolactin ✓

(9x1) **(9)**

1.3

1.3.1 Both A and B ✓✓

1.3.2 A only ✓✓

1.3.3 B only ✓✓

1.3.4 Both A and B ✓✓

1.3.5 None ✓✓

(5x2) **(10)**



1.4

1.4.1 Central nervous system ✓ (1)

1.4.2 a) Corpus callosum ✓ (1)

b) Pituitary gland ✓ /hypophysis (1)

c) Medulla oblongata ✓ (1)

1.4.3 a) B ✓ Cerebrum ✓ (2)

b) D ✓ Hypothalamus ✓ (2)

c) A ✓ Cerebellum ✓ (2)

1.4.4 A ✓ /B (Mark first answer only)
(Any ONE correct answer) (1)

1.4.5 a) Cranium ✓ (1)

b) Vertebra ✓ /vertebrae (1)

(13)

TOTAL SECTION A: [50]



SECTION B

QUESTION 2

2.1

- 2.1.1 a) Vas deferens ✓ (1)
 b) Epididymis ✓ (1)
 c) Seminiferous tubules ✓ (1)
- 2.1.2 Storage of sperm cells ✓ /maturation of sperm cells. (1)
- 2.1.3 a) Puberty ✓ (1)
 b) Meiosis ✓ (1)
 c) Testosterone ✓ (1)
- 2.1.4 a) Acrosome ✓ (1)
 b) Nucleus ✓ (1)
- 2.1.5 • Structure of spermatid in first phase is rounder ✓ whereas
 • in the second phase it is more oval ✓ or torpedo shaped.

OR

- Spermatid in first phase has a very short tail ✓
- spermatid in second phase has a longer (more developed) tail. ✓

(Mark FIRST answer only)

(Any 1x2) (2)

- 2.1.6 • Contains many mitochondria ✓
 • to supply energy for sperm to move ✓ to reach the ovum. (2)
- 2.1.7 • Less sperm cells will be produced ✓ than in normal testis and this
 • will reduce the fertility of the male ✓ /make the male to be infertile. (2)

(15)

2.2

- 2.2.1 a) Physical ✓ /Spines (1)
 b) Chemical ✓ /Trichomes (1)
- 2.2.2 • Thorns will deter animals from eating ✓ /browsing the leaves of the plant.
 • More leaves present to perform photosynthesis. ✓
 • Therefore, more energy for growth ✓ /more growth will take place.

(Any TWO correct answers)

(2)



- 2.2.3 • An external or internal change ✓
 • that cause a reaction ✓ /response from an organism. (2)
- 2.2.4 Negative geotropism ✓ (1)
- 2.2.5 • Auxins ✓
 • gather on bottom of the stem ✓ /lower half of the stem
 • under the influence of gravity. ✓
 • Higher auxin levels on the bottom of stem stimulates cell elongation ✓ in this area and cause the stem to curve upwards. (4)
- (11)**
- 2.3
- 2.3.1 a) Ciliary body ✓ / muscle (1)
 b) Cornea ✓ (1)
- 2.3.2 C ✓ Iris ✓ (2)
- 2.3.3 a) Aqueous humour ✓ (1)
 b) • Maintain shape of the eye ✓ /curved shape of the cornea
 • Supply the lens/cornea with nutrients and oxygen ✓
 • Supply the lens/cornea with oxygen ✓
 • Refraction of light ✓
 • Maintain eye pressure ✓
 • Remove waste product ✓
- (Mark FIRST answer only) (Any ONE correct answer) (1)**
- 2.3.4 Accommodation ✓ (1)
- 2.3.5 Diagram Y ✓ (1)
- 2.3.6 • Suspensory ligaments/B are slackened ✓ /less taut
 • Lens/E is more convex ✓ (2)
- (10)**



2.4

2.4.1 Altricial ✓ development (1)

- 2.4.2
- Body partially covered with feathers ✓
 - Chicken cannot stand up ✓
 - Eyes of chicken are not open ✓ /developed

(Mark first TWO answers only) (Any TWO correct answers) (2)

- 2.4.3
- Larger eggs of Spotted thick-knee ✓
 - have more nutrients ✓ for the developing embryo
 - and the offspring is therefore more developed. ✓

OR

- Smaller eggs of the pigeon ✓
- have less nutrients ✓ for the developing embryo
- and the offspring is therefore less developed. ✓

(Any 1x3) (3)

2.4.4 Pigeon ✓ (1)

2.4.5 They lay eggs that develop outside the female's body. ✓ (1)

(8)

2.5

2.5.1 Adrenal ✓ gland (1)

2.5.2 a) Aldosterone ✓ (1)

b) Adrenaline ✓ (1)

2.5.3 Dilation ✓ of pupil (1)

- 2.5.4
- Hormones are secreted ✓ and move
 - directly into blood vessels. ✓

OR

- No ducts present ✓
- for the transport of hormones ✓ /secretions.

(Mark FIRST answer only) (Any correct 1x2) (2)

(6)

[50]



QUESTION 3

3.1

- 3.1.1 a) Hypothalamus ✓ (1)
 b) Pituitary ✓ gland/hypophysis (1)
 c) Kidney ✓ (1)

- 3.1.2 • As the rate of urine production decreases ✓
 • the urine concentration increases. ✓ (2)

3.1.3 24 ✓ % ✓ (2)

- 3.1.4 • Lower levels of ADH ✓
 • cause the distal convoluted tubules ✓ /collecting ducts in kidney
 • to become less permeable to water. ✓
 • Less water is reabsorbed in these tubes. ✓
 • More water leaves the body as urine ✓ /production of large volume of urine.
 • The water content in blood decreases ✓ and stimulates thirst.

(Any FOUR correct answers) (4)

- 3.1.5 a) A decrease ✓ in the rate of urine production (1)
 b) An increase ✓ of the secretion of ADH (1)

(13)

3.2

3.2.1 Foetus ✓ (1)

- 3.2.2 • In placenta praevia the placenta has developed over the cervix ✓ /blocks the opening of the uterus.
 • In normal pregnancy the placenta is attached to the side of the uterus ✓ / endometrium/not covering the cervix. (2)

3.2.3 $\frac{19,8 \text{ million}}{135 \text{ million}} \times 100 = 14,7\%$ ✓ (3)

- 3.2.4 • Blood vessels in the umbilical cord constrict ✓
 • and less oxygenated blood is transported to the foetus. ✓ (2)



- 3.2.5
- Protects the foetus against mechanical injury ✓ /act as shock-absorber.
 - Prevents the foetus from drying out ✓ /desiccation.
 - Maintains a constant temperature around the foetus ✓ /protects foetus from temperature changes.
 - Allows for free movement of the developing foetus. ✓

(Mark first TWO answers only)

(Any TWO correct answers)

(2)

- 3.2.6
- The chemicals are transported in the mother's blood ✓
 - to the placenta ✓
 - and they will move by diffusion ✓ from the mother's blood
 - and transported by the umbilical vein ✓ to the foetus.

(Any THREE correct answers)

(3)

- 3.2.7
- Conduct educational programs ✓ in schools/workplaces.
 - Introduce a law to make warnings on e-cigarettes more prominent ✓ /visual.
 - Advertisements/billboards to inform females about the dangers. ✓

(Mark first TWO answers only)

(Any correct TWO answers)

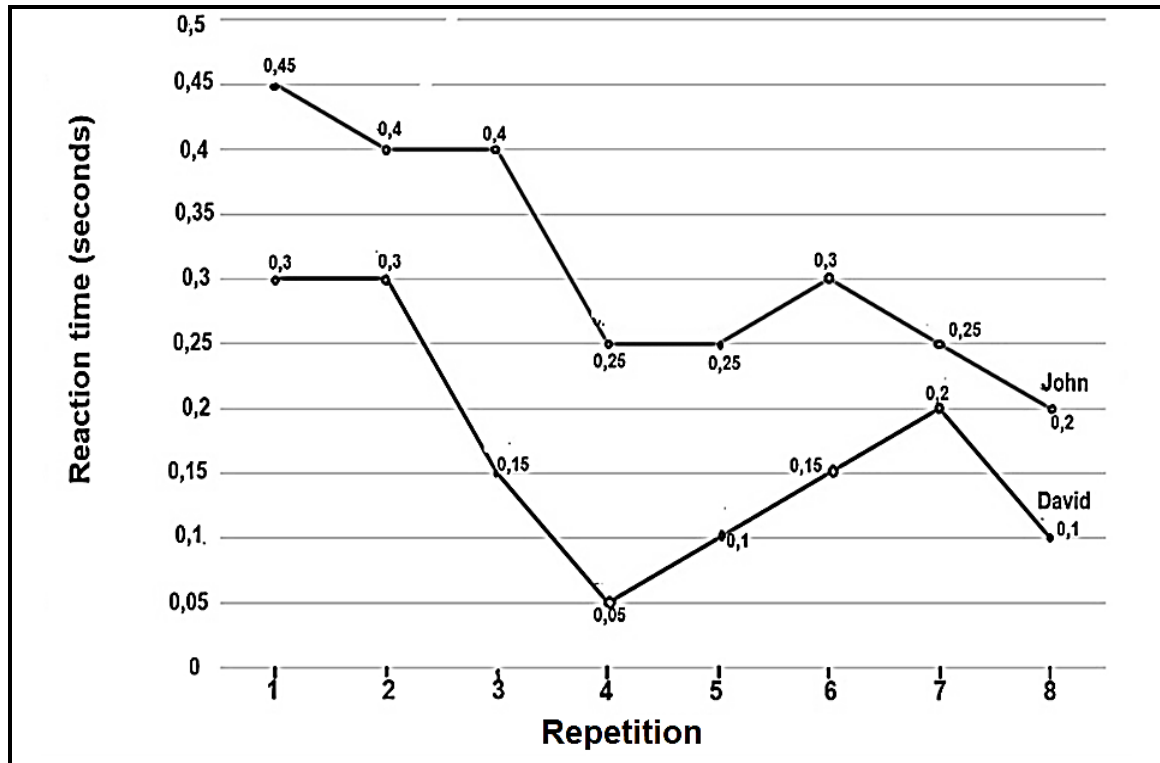
(2)

(15)



3.3

3.3.1 **Heading:** Line graph to illustrate the reaction time of two males at 8 repetitions.



CRITERIA	ELABORATION	MARK
Caption (C)	Include all variables (reaction time, repetitions)	1
Type (T)	Line graphs on same set of axes	1
Labels (L)	x-axis: Repetition y-axis: Reaction time (seconds) Key/labels: David; John	1
Scale (S)	Correct scale on x- and y-axis	1
Plotting (P)	1-3 sets of points correctly plotted	1
	4-7 sets of points correctly plotted	2
	All 8 sets of points correctly plotted	3

(7)

3.3.2 • The higher the age of males the slower the reaction time. ✓✓

OR

• The lower the age of males the faster the reaction time. ✓✓

OR

• Any prediction that mentions the effect of age on the reaction time. ✓✓

(Any ONE correct answer) (2)



- 3.3.3 0,05 seconds ✓ (1)
- 3.3.4
- Type of light ✓ /light intensity
 - Distance of light ✓
 - Type of Computer keyboard ✓
 - Distance of the hand of the responder from the keyboard. ✓
- (Mark first TWO answers only) (Any correct TWO answers) (2)**
- 3.3.5 a) • Younger males have a faster reaction time than older males. ✓✓
- OR**
- Older males have a slower reaction time than younger males. ✓✓
- (Any 1x2) (2)**
- b) • Carry out more than 8 repeats of the reaction test. ✓
- Test more than 1 male in the different age groups. ✓
- (Mark first TWO answers only) (2)**
- 3.3.6 • Absence of the myelin sheath will slow down the speed of electrical impulses ✓
- and will therefore cause slower reaction time. ✓ (2)
- 3.3.7 a) The muscle of the arm ✓ (1)
- b) Cerebrum ✓ (1)
- c) Eyes ✓ (1)
- d) Sensory ✓ / neurons (1)

(22)**[50]****TOTAL SECTION B: [100]****GRAND TOTAL: [150]**