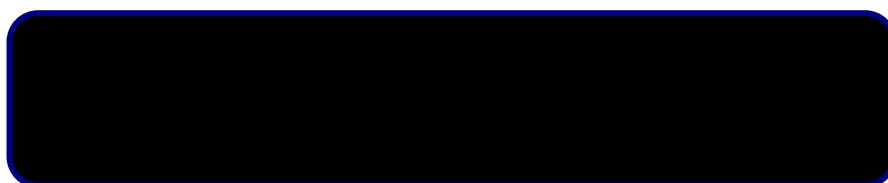




LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION



GRADE 12

LIFE SCIENCES P1

SEPTEMBER

2026

MARKING GUIDELINES

MARKS: 150

This MARKING GUIDELINES consists of 11 pages

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 part of it is required**
Read all and credit relevant part.
4. **If comparisons are asked for and 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 becomes correct again, resume credit.
9. **Non-recognized 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, 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 National memo discussion meeting.
14. **If only letter is asked for and only name is given (and vice versa)**
No credit.

15. **If units are not given in measurements**
Memorandum will allocate marks for units separately, except where it is already given in the question.
16. Be sensitive to the **sense of an answer, which may be stated in a different way.**
17. **Caption**
Credit will be given for captions to all illustrations (diagrams, graphs, tables, etc.) except where it is already given in the question.
18. **Code-switching of official languages (terms and concepts)**
A single word or two that appears 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.

SECTION A			
QUESTION 1			
1.1			
	1.1.1	D✓✓	
	1.1.2	C✓✓	
	1.1.3	B✓✓	
	1.1.4	A✓✓	
	1.1.5	B✓✓	
	1.1.6	C✓✓	
	1.1.7	C✓✓	
	1.1.8	B✓✓	
	1.1.9	B✓✓	
		(9 x 2)	(18)
1.2			
	1.2.1	Blastula✓/blastocyst	
	1.2.2	Sclera✓	
	1.2.3	Thermoregulation✓	
	1.2.4	Puberty✓	
	1.2.5	Parasympathetic nervous system✓.	
	1.2.6	Mitosis✓	
	1.2.7	Abscisic Acid✓	
	1.2.8	Meninges✓	
	1.2.9	Geotropism✓/Gravitropism	
	1.2.10	Binocular✓/Stereoscopic vision	
		(10 x1)	(10)

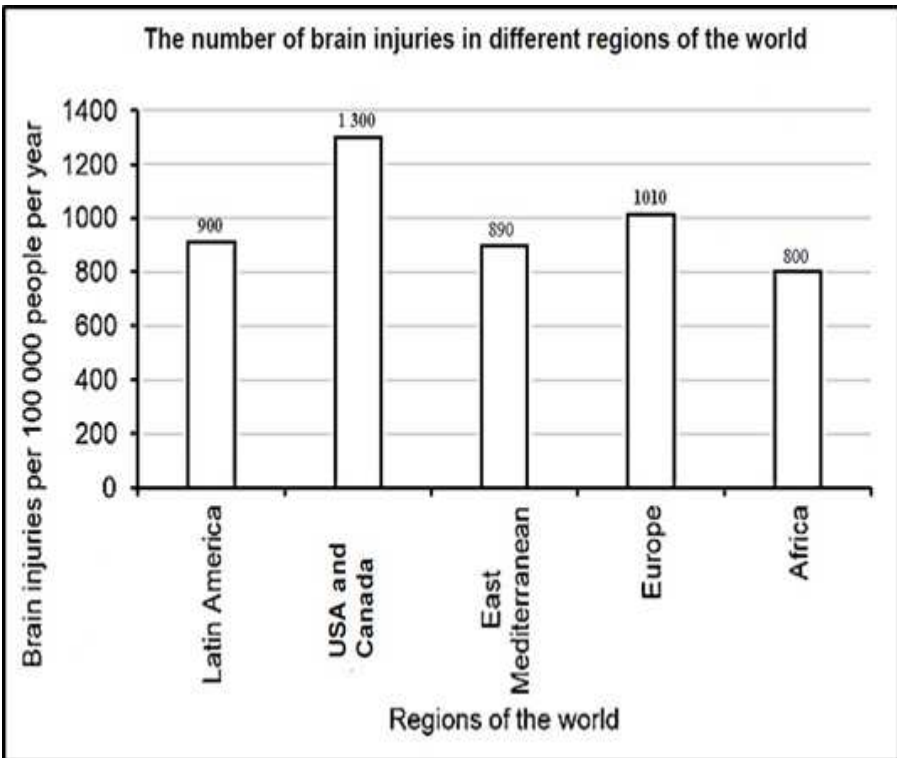
1.3			
	1.3.1	B only✓✓	
	1.3.2	None✓✓	
	1.3.3	B only✓✓	
		(3 x 2)	(6)
1.4			
	1.4.1	(a) Vas deferens✓/sperm duct	(1)
		(b) Urethra✓	(1)
		(c) Fallopian tube✓/oviduct	(1)
	1.4.2	E✓	(1)
	1.4.3	(a) C✓ - Prostate gland✓	(2)
		(b) H✓ - vagina✓	(2)
	1.4.4	Oogenesis✓	(1)
	1.4.5	46✓	(1)
			(11)
1.5			
	1.5.1	(a) Amniotic egg ✓	(1)
		(b) Internal✓fertilisation	(1)
	1.5.2	Down feathers✓	(1)
	1.5.3	Altricial✓	(1)
	1.5.4	Allantois✓	(1)
	1.5.4	B✓	(1)
			(6)
		TOTAL SECTION A:	50

SECTION B			
QUESTION 2			
2.1			
	2.1.1	(a) Radial muscle✓	(1)
		(b) Circular muscle✓	(1)
		(c) Ciliary body✓ /ciliary muscles	(1)
	2.1.2	(a) B✓	(1)
		(b) C✓	(1)
	2.1.3	- Accommodation*✓ for distant vision - Ciliary muscles relax✓ - Suspensory ligaments become taut✓ /tension on the lens increases - Lens become less convex✓ /flat - Light rays are refracted less✓ - Light rays are focused onto the retina✓ 1* Compulsory mark + 5	(6)
			(11)
2.2			
	2.2.1	A rapid, involuntary response✓ to a stimulus✓	(2)
	2.2.2	- From the dendrite✓ - to the axon✓ OR - From the cell body✓ to the axon✓ Any	(2)
	2.2.3	0 to 1✓µm / accept 0 to 0,9 µm	(1)
	2.2.4	As the axon diameter increases the speed of the impulse increases ✓✓ OR As the axon diameter decreases the speed of the impulse decreases ✓✓	(2)
	2.2.5	- The speed of the impulse will decrease✓ - resulting in it taking longer for impulses to reach the effectors✓ - and the person will react slowly✓	(3)
			(10)

2.3			
	2.3.1	Male fertility✓	(1)
	2.3.2	Measuring the sperm count✓/total number of healthy sperms	(1)
	2.3.3	- Age✓ - Diet✓ - Exercise✓ - Lifestyle ✓ - Activity level✓ - Occupation✓ Mark first TWO only	(2)
	2.3.4	- The higher temperature/pressure on the testes✓ due to the tight underwear - could decrease the sperm count✓/sperm production/lead to production of abnormal sperms/unhealthy sperms/poor quantity and quality of sperms	(2)
	2.3.5	- TU inhibits the secretion of testosterone✓ - spermatogenesis cannot take place✓/ no sperm will be produced	(2)
	2.3.6	- To determine if TU is still effective after 12 months✓ - To see if the sperm count returns to normal✓ when the treatment stops Mark first ONE only	(1)
			(9)
2.4			
	2.4.1	Auxins✓	(1)
	2.4.2	- Auxins diffuse through the agar to the stem✓ - auxins are sensitive to light✓/are destroyed by light/move away from light - There is a higher concentration of auxins on the darker side of the stem✓ - stem grows faster ✓ /shows more cell elongation on the darker side - causing the stem to grow/bend towards light✓	(5)
	2.4.3	- Light will not reach the tip of the stem✓ - Auxins are distributed evenly throughout the stem✓ - The stem will grow straight upwards✓	(3)
			(9)

2.5			
	2.5.1	(a) Eustachian tube ✓	(1)
		(b) Auditory nerve ✓	(1)
	2.5.2	F✓	(1)
	2.5.3	- Tympanic membrane will not be able to vibrate ✓to - transmit vibrations to the middle ear/ossicles✓ and this - may cause hearing loss✓/deafness Any	(2)
	2.5.4	- The receptors cannot convert the stimuli into impulses✓ - No impulses/fewer impulses are transmitted to the cerebrum✓ - and the person does not hear anything✓/hearing is impaired/no interpretation happens	(3)
	2.5.5	- The sound vibrations are transmitted from the large tympanic membrane✓ - to the smaller oval window✓ - through the ossicles✓ - which are arranged from largest to smallest✓ - This concentrates the vibrations✓, amplifying them Any	(3)
			(11)
		TOTAL QUESTION 2:	50

QUESTION 3			
3.1			
	3.1.1	(a) Adrenal✓gland	(1)
		(b) Pituitary gland✓/Hypophysis	(1)
	3.1.2	(a) ADH✓	
		(b) prolactin✓	(1)
	3.1.3		
		(a) Adrenalin✓	(1)
		(b) - adrenalin causes blood vessels to dilate✓since - muscles require more blood✓/with more oxygen and glucose - for increased cellular respiration✓/increased breakdown of glucose - to supply additional energy✓	(4)
		(c) - Part C/the medulla oblongata is stimulated✓and - send impulses to the heart✓ - the heart beat faster✓ - impulses are also sent to the breathing muscles✓/ diaphragm and intercostal muscles - the rate and depth of breathing increases✓ - More carbon dioxide is taken to the lungs✓/ exhaled - the carbon dioxide levels return to normal✓	(1)
		Any	(5)
			(14)
	3.2		
	3.2.1	(a) Ovulation✓	(1)
		(b) LH ✓/(Luteinising Hormone)	(1)
	3.2.2	- It causes the endometrium✓ - to become thicker✓/more glandular/more vascular	(2)
	3.2.3	(a) - The levels of progesterone remain high✓ - the endometrium is maintained✓ - the endometrial lining is not shed✓/no menstruation takes place	(3)

		(b) - The levels of progesterone remain high✓ - FSH secretion is inhibited✓ - no new follicle develops✓/no ovum is produced	(3)												
			(10)												
	3.3														
	3.3.1	$\frac{4900}{5} \checkmark \quad (900+1300+890+1010+800)$ $= 980 \checkmark$	(2)												
	3.3.2	The number of brain injuries in different regions of the world <table><thead><tr><th>Regions of the world</th><th>Brain injuries per 100 000 people per year</th></tr></thead><tbody><tr><td>Latin America</td><td>900</td></tr><tr><td>USA and Canada</td><td>1300</td></tr><tr><td>East Mediterranean</td><td>890</td></tr><tr><td>Europe</td><td>1010</td></tr><tr><td>Africa</td><td>800</td></tr></tbody></table>	Regions of the world	Brain injuries per 100 000 people per year	Latin America	900	USA and Canada	1300	East Mediterranean	890	Europe	1010	Africa	800	
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		Rubric/criteria for marking graph: <table><tr><th>Criteria</th><th>Mark allocation</th></tr><tr><td>Bar graph is drawn (T)</td><td>1</td></tr><tr><td>Caption of the graph includes both variables (C)</td><td>1</td></tr><tr><td>Correct labels on X-axis and Y-axis (L)</td><td>1</td></tr><tr><td>Correct scale for Y-axis, equal spaces between bars and equal width of bars for X-axis</td><td>1</td></tr><tr><td>Plotting: (P) 1 – 4 co-ordinates plotted correctly All 5 co-ordinates plotted correctly</td><td>1 2</td></tr></table>	Criteria	Mark allocation	Bar graph is drawn (T)	1	Caption of the graph includes both variables (C)	1	Correct labels on X-axis and Y-axis (L)	1	Correct scale for Y-axis, equal spaces between bars and equal width of bars for X-axis	1	Plotting: (P) 1 – 4 co-ordinates plotted correctly All 5 co-ordinates plotted correctly	1 2	(6)
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Plotting: (P) 1 – 4 co-ordinates plotted correctly All 5 co-ordinates plotted correctly	1 2														
			(8)												
3.4															
	3.4.1	(a) Umbilical cord✓	(1)												
		(b) Cervix✓/cervical opening	(1)												
	3.4.2	Umbilical artery✓	(1)												
	3.4.3	- Protects the foetus from shock✓/Acts as a shock absorber - Protects the foetus from drying out✓ - Protects the foetus from temperature changes✓ - Allows free foetal movement✓ Mark first TWO only	(2)												
	3.4.4	- The foetus will receive less nutrients✓ and therefore have a lower birth mass✓/physical under- development/mental under- development -The foetus will receive less oxygen And therefore have a lower birth mass/✓physical under- development/mental under- development -Waste will accumulate✓ And it will affect the functioning of the foetus✓/poisons foetus Mark first ONE only	(2)												
			(7)												

3.5			
	3.5.1	Negative feedback mechanism✓	(1)
	3.5.2	$\frac{(25 - 5)}{5} \checkmark \times 100 \checkmark$ $= 400 \checkmark \%$ OR $\frac{(24 - 5)}{5} \checkmark \times 100 \checkmark$ $= 380 \checkmark \%$	(3)
	3.5.3	- Thyrotoxicosis increases the metabolic rate✓/rate of cellular metabolism ✓ - more glucose is used✓ - less glucose is stored✓ - fat is broken down✓ causing weight loss Any	(3)
	3.5.4	- The high levels of thyroxin✓ in the blood - causes the pituitary gland✓/Hypophysis - to secrete less TSH✓ into the blood - Causing the levels of TSH to decrease✓	(4)
			(11)
		TOTAL QUESTION 3:	50
		TOTAL SECTION B:	100
		GRAND TOTAL:	150