basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

LIFE SCIENCES P1

NOVEMBER 2025

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 9 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 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 national standardisation meeting.

14. **If only the letter is asked for but only the name is given (and vice versa)**
    Do not credit.

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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, 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 internal moderator who in turn will consult with the national internal moderator (and the Umalusi moderators where necessary).

20. **Official marking guidelines**
Only marking guidelines bearing the signatures of the national internal moderator and the Umalusi moderators and distributed by the National Department of Basic Education via the provinces must be used.

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SECTION A

QUESTION 1

1.1	1.1.1	C✓✓		
	1.1.2	A✓✓		
	1.1.3	D✓✓		
	1.1.4	A✓✓		
	1.1.5	C✓✓		
	1.1.6	D✓✓		
	1.1.7	B✓✓		
	1.1.8	D✓✓		
	1.1.9	B✓✓		
	1.1.10	A✓✓	(10 x 2)	**(20)**
1.2	1.2.1	Progesterone✓		
	1.2.2	Cataracts✓		
	1.2.3	Oogenesis✓		
	1.2.4	Blind spot✓		
	1.2.5	Ovulation✓		
	1.2.6	Chorion✓		
	1.2.7	Abscisic acid✓		
	1.2.8	Homeostasis✓	(8 x 1)	**(8)**
1.3	1.3.1	Both A and B✓✓		
	1.3.2	B only✓✓		
	1.3.3	Both A and B✓✓	(3 x 2)	**(6)**
1.4	1.4.1	(a) C✓		(1)
		(b) A✓ and B✓		(2)
		(c) A✓		(1)
	1.4.2	(a) Geotropism✓/gravitropism		(1)
		(b) Phototropism✓		(1)
	1.4.3	(a) X✓		(1)
		(b) X✓		(1)
				(8)
1.5	1.5.1	Sensory✓ neuron		(1)
	1.5.2	(a) Axon✓		(1)
		(b) Cell body✓		(1)
		(c) Dendrite✓		(1)
	1.5.3	(a) C✓		(1)
		(b) F✓		(1)
		(c) A✓		(1)
	1.5.4	Multiple sclerosis✓		(1)
				(8)

TOTAL SECTION A: 50

SECTION B

QUESTION 2

2.1 2.1.1
- The egg has a high percentage (%) of yolk✓* therefore it
- contains more energy✓/nutrients
- The hatchling will be well developed✓ making it
- (more) independent✓ Compulsory mark✓* 1 + Any 2 (3)

2.1.2
- Eagle✓
- Vulture✓
- Pigeon✓ (3)

(Mark first THREE only)

2.1.3
- The eggs have a lower percentage (%) of yolk✓ therefore
- the hatchlings will not be fully developed✓ (2)

(8)

2.2 2.2.1
(a) C✓- Testis✓ (2)
(b) A✓- Epididymis✓ (2)

2.2.2
- It maintains the temperature of the testes/part C lower than body temperature✓
- to ensure the production of good quality/quantity of sperm✓

OR

- It protects the testes from (mechanical) injury✓ to ensure the
- production of good quality/quantity of sperm✓ (2)

2.2.3
- Spermatogenesis✓*
- Under the influence of testosterone✓
- diploid cells✓
- in the seminiferous tubules✓/testes
- undergo meiosis✓
- to form haploid (sperm) cells✓ Compulsory mark✓* 1 + Any 4 (5)

(11)

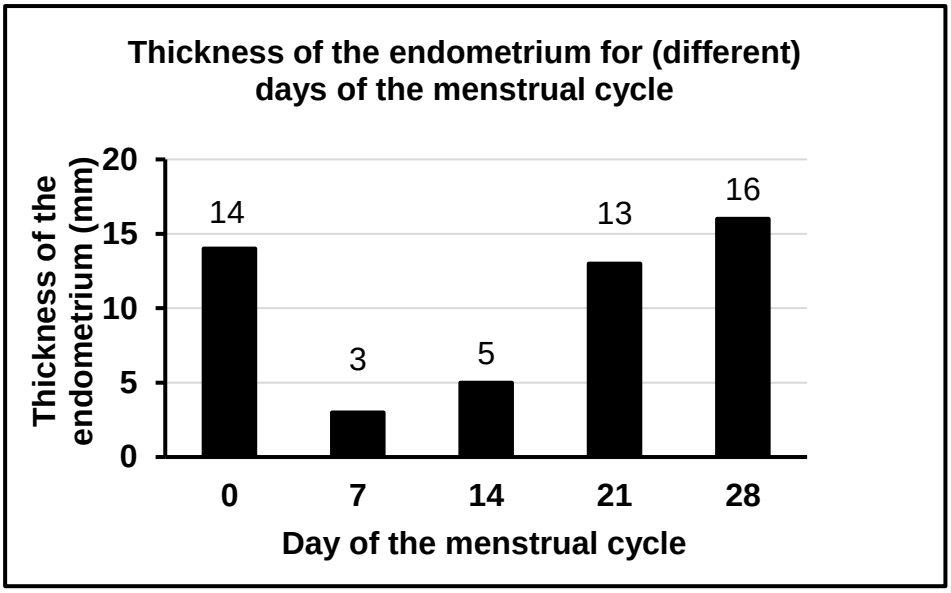
2.3 2.3.1
(a)
- The corpus luteum degenerates✓ therefore
- the progesterone levels decrease✓
- The endometrium is no longer maintained✓/menstruation occurs (3)

(b)
- the Graafian follicle✓ secretes
- oestrogen✓ which increases endometrium thickness (2)

2.3.2
- It becomes more vascular✓and
- more glandular✓ (2)

2.3.3
- It allows for implantation✓ of the embryo/the development of the placenta/increased blood supply for nutrition of the developing embryo (1)

2.3.4



Criteria for marking the graph:

Criteria	Mark allocation
Type of graph: Bar graph is drawn (**T**)	1
Caption of the graph includes both variables (**C**)	1
Correct labels for X-axis and Y-axis and correct unit for Y-axis (**L**)	1
Equal space and width of bars for X-axis and correct scale for Y-axis (**S**)	1
Plotting: (**P**) 1 - 4 co-ordinates are plotted correctly All 5 co-ordinates are plotted correctly	 1 2

(6)
(14)

If a histogram or line graph is drawn, marks will be lost for:

- Type of graph
- Scale

If axes are transposed:

- Can get all marks if labels are also swopped and bars are horizontal
- 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

2.4	2.4.1	Hypothalamus✓	(1)
	2.4.2	(Diagram) X✓	(1)
	2.4.3	- The arteriole dilates✓/vasodilation took place - More blood flows to the (surface of) the skin✓ and - more heat is lost✓/more radiation occurs to - decrease/regulate the body temperature✓	(4) **(6)**
2.5	2.5.1	Height✓	(1)
	2.5.2	- Gender✓/only boys participated - All (the boys) had ISS✓ - Age✓/all (the boys) were 2-years old - Duration of investigation✓ **(Mark first THREE only)**	Any (3)
	2.5.3	To prove that it is the added growth hormone that caused the change in the height of the boys and not any other factor✓✓	(2)
	2.5.4	(25 x 0,028)✓ = 0,7✓mg✓	(3)
	2.5.5	Added growth hormone causes an increase in height of children with ISS✓✓	(2) **(11)** **[50]**

QUESTION 3

3.1 3.1.1 (a) Aqueous humour✓ (1)

(b) Pupil✓ (1)

(c) Iris✓ (1)

3.1.2 It is not evenly curved✓/rounded (1)

3.1.3
- The light is refracted unevenly✓/in different directions and
- does not focus on the retina✓
- forming a blurred image✓ (3)

3.1.4
- Laser✓
- Surgery✓
- Glasses✓/spectacles/lenses Any (1)

(Mark first ONE only) **(8)**

3.2 3.2.1 Central nervous system✓ (1)

3.2.2 (a) B✓ - Cerebellum✓ (2)

(b) C✓ - Medulla oblongata✓ (2)

(c) A✓ - Cerebrum✓ (2)

3.2.3
- (The impulse) is transmitted by the sensory neuron✓
- via the dorsal root of the spinal nerve✓ to
- the interneuron✓ and to
- the motor neuron✓
- by synaptic✓ contact
- It is then transmitted via the ventral root (of the spinal nerve)✓
- to the effector✓ which brings about the reflex action Any (6)

(13)

3.3
- Ciliary muscles relax✓
- Suspensory ligaments become taut✓/tension on the lens increases
- The lens becomes less convex✓ causing
- light to be refracted less✓
- to form a clear image on the retina✓ **(5)**

3.4 3.4.1 (a) Pinna✓ (1)

(b) Ossicles✓ (1)

3.4.2 C✓ and D✓ (2)

(Mark first TWO only)

3.4.3
- Cristae are stimulated✓ and
- convert the stimulus to an impulse✓ which
- is sent via the auditory nerve✓
- to the cerebellum✓ for interpretation
- Impulses are then sent to the skeletal muscles✓ to restore balance (5)

3.4.4 (a)
- Fewer/no stimuli will be converted into impulses✓
- Fewer/no impulses will be sent to the cerebrum✓ to be interpreted (2)

(b)
- The earplugs limit the sound waves in the auditory canal✓/ reaching the tympanic membrane
- Fewer vibrations are formed in the middle ear✓
- Fewer pressure waves are formed in the cochlea✓ to prevent damage (3)

(14)

3.5 3.5.1 Pancreas✓ (1)

3.5.2 Three✓/nine (1)

3.5.3 ✓

LONG-ACTING INSULIN TREATMENT	RAPID-ACTING INSULIN TREATMENT
One injection✓ is given over 23 hours	Three injections✓ are given over 23 hours
The injection is given at 23:00✓	An injection is given before every meal✓
The injection causes a lower concentration of insulin✓/10 international units	The injection causes a higher concentration of insulin✓/30 international units
The concentration of insulin in the blood remains constant for long periods of time✓/20 hours	The concentration of insulin in the blood fluctuates✓/increases and drops
Long lasting effect✓	Lasts a shorter amount of time✓
Insulin concentration takes 1 hour to increase to its peak✓	Insulin concentration takes 2 hours to increase to its peak✓

(Mark first TWO only) Table (1) plus any (2 x 2) (5)

3.5.4 Rapid-acting✓ insulin (1)

3.5.5
- The insulin will reduce the glucose level even further✓/glucose is converted to glycogen/increased glucose uptake by cells
- There is less glucose available for cellular respiration✓ (2)

(10)
[50]

TOTAL SECTION B: 100
GRAND TOTAL: 150

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