LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

LIFE SCIENCES P1

SEPTEMBER 2025

MARKING GUIDELINES

MARKS: 150

This MARKING GUIDELINES consists of 11 pages

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NSC

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.

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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 A✓✓

1.1.2 B✓✓

1.1.3 D✓✓

1.1.4 D✓✓

1.1.5 C✓✓

1.1.6 D✓✓

1.1.7 B✓✓

1.1.8 C✓✓

1.1.9 C✓✓ (9 x 2) **(18)**

1.2

1.2.1 Chorionic villi✓

1.2.2 Choroid✓

1.2.3 Homeostasis✓

1.2.4 Testis✓

1.2.5 Meninges✓.

1.2.6 Amniotic fluid✓

1.2.7 Binocular✓ /Stereoscopic

1.2.8 Grommet ✓

1.2.9 Abscisic Acid✓

1.2.10 External fertilisation✓ (10 x1) **(10)**

1.3

1.3.1 A only✓✓

1.3.2 None✓✓

1.3.3 Both A and B ✓✓ (3 x 2) **(6)**

1.4

1.4.1	(a) Interneuron✓/Connector neuron	(1)
	(b) Cell body✓	(1)
1.4.2	B✓	(1)
1.4.3	(a) D✓ - synapse✓	(2)
	(b) A✓ - motor neuron✓	(2)
1.4.4	Sympathetic✓ and parasympathetic✓nervous system **(Mark FIRST TWO only)**	(2)
		(9)

1.5

1.5.1	(a) Pituitary ✓ gland / Hypophysis	(1)
	(b) TSH✓ / Thyroid stimulating hormone	(1)
	(c) Thyroxin✓	(1)
1.5.2	Negative feedback✓ mechanism	(1)
1.5.3	C✓	(1)
1.5.4	Goitre✓	(1)
1.5.5	D✓	(1)
		(7)
	TOTAL SECTION A:	**50**

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SECTION B

QUESTION 2

2.1

2.1.1 (a) Cerebellum✓ (1)

(b) Cochlea✓ (1)

2.1.2 F✓ - Eustachian tube✓ (2)

2.1.3 - Part B controls vital processes✓ such as heartbeat and breathing
-These processes will stop✓ leading to death (2)

Stanmorephysics.com

2.1.4 - The impulses will be interpreted✓
- and sent to the skeletal muscles✓
- to maintain balance✓ (3)

2.1.5 - The mucus will block the opening of the Eustachian tube✓
- Air cannot enter or leave✓ the middle ear
- to equalise pressure✓/causing imbalance in pressure

OR

- Mucus may move through the Eustachian tube✓
- causing the pressure in the middle ear✓
- pushing on the tympanic membrane✓

(3)
(12)

2.2

2.2.1 (a) B✓ – vagina✓ (2)

(b) D✓- Fallopian tube✓ (2)

2.2.2 - Encloses and protects the developing foetus✓
- Contracts during labour✓
- Allows for implantation of the embryo✓
- Forms part of the placenta✓

(Mark FIRST TWO only) (2)

2.2.3 - A woman has two ovaries✓/Fallopian tubes
-The egg produced in the other ovary✓ can still be fertilised in the other Fallopian tube✓

Any (2)

(8)

2.3 **- spermatogenesis***✓
- Under the influence of testosterone✓
- Diploid cells✓
- in the seminiferous tubules✓ of the testis
- undergo meiosis✓
- to form haploid sperm cells✓

(1* **Compulsory mark** + Any 3**)** **(4)**

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2.4

2.4.1 Umbilical cord✓ (1)

2.4.2 - It secretes progesterone✓during pregnancy
- Immunity is transferred from the mother to the foetus✓
- It act as a micro-filter✓ /prevents harmful substances from reaching the foetus

(Mark FIRST TWO only) (2)

2.4.3

Blood vessel C	**Blood vessel D**
Has a high concentration of nutrients✓/examples	Has a low concentration of nutrients✓/examples
Has a low concentration of waste products✓/examples	Has a high concentration of waste products✓/examples
High concentration of oxygen✓	Low concentration of oxygen✓
Low concentration of carbon dioxide✓	High concentration of carbon dioxide✓

(Mark FIRST TWO only) Table*: (1) and (Any 2 x2) (5)

2.4.4 - Waste products/ nitrogenous waste/ carbon dioxide will accumulate✓ in the foetus' body
- leading to death of the foetus✓

(Mark FIRST ONE only) (2 x 1) (2)

(10)

2.5

2.5.1 - Bleeding for longer than a week✓/prolonged bleeding
- Heavy menstrual flow✓/abnormally heavy bleeding
- Blood clot ✓

(Mark FIRST TWO only) (2)

2.5.2 - Ovulation does not occur✓ therefore
- Corpus luteum will not form✓ (2)

2.5.3 - More blood will be lost✓
- within a short space of time✓
- leading to poor oxygen supply✓
- decreasing the rate of cellular respiration✓
- less energy will be available✓ Any (3)

2.5.4 - High levels of progesterone in the blood✓
- will inhibit the secretion of FSH✓
- no new follicle will develop✓/no ovum will be produced (3)

(10)

2.6

2.6.1 Amniotic egg✓ (1)

2.6.2 A✓ (1)

2.6.3 Precocial✓ (1)

2.6.4 - Young are born with eyes open✓
- Bodies are covered with fur✓
- Can move about after birth✓
- Able to feed themselves✓ Any (3)

(6)

TOTAL QUESTION 2: 50

QUESTION 3

3.1

3.1.1 Geotropism✓/gravitropism (1)

3.1.2 - Auxins✓
- accumulate on the lower side of the stem✓
- because of gravity✓
- the higher concentration of auxins on the lower part of the stem✓
- stimulate cell elongation✓/growth
- the stem will grow faster on the lower side✓thus bends upwards Any (4)

3.1.3 - Leaves and stem will receive maximum sunlight ✓
- for photosynthesis✓

OR

- Exposes the flowers more favourably✓
- for pollination✓

(2 x1) (2)

3.1.4 The roots will grow downwards✓/towards gravity/will show positive geotropism (1)

(8)

3.2

3.2.1 Cornea✓ (1)

3.2.2 - It has radial✓ and circular✓ muscles
- which contract and relax✓
- to control the size of the pupil✓

Any (3)

3.2.3 - The lens will become cloudy✓/milky/opaque
- no light/less light will enter the eye✓
- no image will be formed on the retina✓/ no sight/ weak sight
- less/no generation of impulses✓/no impulses transmitted to the cerebrum

Any (2)

3.2.4 - Area **B** contains a high concentration of photoreceptors✓/cones

- Area **C** has no receptors✓/rods and cones (2)

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3.2.5 It is when a person is able to see objects that are near clearly but the once that are far look blurred✓✓ (2)

3.2.6 - **Accomodation***✓ for distant vision
- The ciliary muscles relax✓
- The ciliary body moves away from the lens✓
- Suspensory ligaments become taut✓
- Tension on the lens increases✓
- Lens becomes less convex✓
- The refractive power of the lens is decreased✓
- A clear image of the distant object is formed on the retina✓

(1* Compulsory mark + any 5) (6)

3.3

3.3.1 Pancreas✓ (1)

3.3.2 Comparison of the blood glucose level of two people✓ over 5 hours✓/before and after ingesting glucose (2)

3.3.3 (145 – 125)✓ OR (146 – 125) = 21 ✓ mg / dl
= 20✓ mg/dl (2)

3.3.4 Accept any answer from 1,7 to 1,9 hours✓ (1)

3.3.5 Ashley✓ (1)

3.3.6 - His glucose level is higher than the normal range✓/ 70 - 100mg/dl
- It takes longer for his glucose level to drop down to its original level✓

(Mark FIRST ONE only) (1)

3.3.7 - When her glucose level is high✓/99/98mg/dl
- Insulin is secreted into the blood✓
- to stimulate liver cells/muscles to convert excess glucose into glycogen✓
- and to stimulate the cells to absorb more glucose✓
- thus decreasing the blood glucose level✓/glucose level returns to normal

Any (4)

(12)

3.4

3.4.1 - It has a duct✓
- to transport sweat✓ to the surface of the skin

Any (1)

3.4.2 - Structure A will constrict✓/vasoconstriction
- Less blood flow to the surface of the skin✓
- Less heat is lost✓
Temperature rises✓/ return back to normal Any (3)

3.4.3 - Enzymes function optimally at normal body temperature✓/ 37°C

- Enzymes/proteins denature at high temperatures✓
- Enzymes will become inactive at low temperatures✓

(Mark FIRST TWO only) (2)

(6)

3.5

3.5.1 (a) Alcohol✓ (1)

(b) Volume of urine✓ (1)

3.5.2 - They used six women in each group✓ (1)

3.5.3 - They were given the same food and did the same activities✓ (1)
- They were the same length, weight and age

3.5.4 - Alcohol inhibits/reduces the secretion of ADH*✓
- Causing the renal tubules✓
- to become less permeable to water✓
- Less water is reabsorbed back into the blood✓
- A larger volume of urine is produced✓

(1* Compulsory mark + Any 3) (4)

(8)

TOTAL QUESTION 3: 50

TOTAL SECTION B: 100

GRAND TOTAL: 150