basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

LIFE SCIENCES P1

MAY/JUNE 2025

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 9 pages.

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.

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.

SECTION A

QUESTION 1

1.1	1.1.1	A✓✓		
	1.1.2	D✓✓		
	1.1.3	C✓✓		
	1.1.4	B✓✓		
	1.1.5	C✓✓		
	1.1.6	A✓✓		
	1.1.7	B✓✓		
	1.1.8	C✓✓		
	1.1.9	B✓✓		
	1.1.10	C✓✓	(10 x 2)	**(20)**
1.2	1.2.1	Endometrium✓		
	1.2.2	Alzheimer's✓ disease		
	1.2.3	Abscisic acid✓		
	1.2.4	Vivipary✓		
	1.2.5	Binocular✓ /stereoscopic vision		
	1.2.6	Corpus callosum✓		
	1.2.7	Allantois✓		
	1.2.8	Auxins✓	(8 x 1)	**(8)**
1.3	1.3.1	A only✓✓		
	1.3.2	Both A and B✓✓		
	1.3.3	Both A and B✓✓	(3 x 2)	**(6)**
1.4	1.4.1	Ovarian cycle✓		(1)
	1.4.2	(a) Graafian follicle✓		(1)
		(b) Ovum✓		(1)
		(c) Corpus luteum✓		(1)
	1.4.3	(a) FSH✓ /Follicle stimulating hormone		(1)
		(b) Oestrogen✓		(1)
		(c) LH✓ /Luteinising hormone		(1)
				(7)
1.5	1.5.1	(a) Pupil✓		(1)
		(b) Cornea✓		(1)
	1.5.2	(a) F✓		(1)
		(b) C✓		(1)
	1.5.3	- Rods✓ - Cones✓ **(Mark first TWO only)**		(2)
	1.5.4	- B✓ - G✓ - H✓ **(Mark first THREE only)**		(3) **(9)**

TOTAL SECTION A: 50

SECTION B

QUESTION 2

2.1 2.1.1
(a) Prostate gland✓ (1)
(b) Seminal vesicle✓ (1)
(c) Urethra✓ (1)

2.1.2 Spermatogenesis✓ (1)

2.1.3
- Under the influence of testosterone✓
- diploid cells✓ /germinal epithelium
- in the seminiferous tubules✓ of the testes
- undergo meiosis✓
- to form haploid sperm✓ cells Any (4)

2.1.4
- Sperm are prevented from entering the vas deferens✓ /leaving the testes
- resulting in few sperm✓/a low sperm count (2)

(10)

2.2 2.2.1
(a) Zygote✓ (1)
(b) Blastocyst✓ /blastula (1)

2.2.2
- Cell A is haploid✓ /has 23 chromosomes /contains the genetic material of the female
- Cell B is diploid✓ / has 46 chromosomes /contains the genetic material of both parents
- Cell A is not fertilised✓ /Cell B is fertilised

OR

- Cell A is haploid✓ /has 23 chromosomes
- Cell B is diploid✓ /has 46 chromosomes
- Cell A contains the genetic material from the female✓ / Cell B contains the genetic material of both parents (3)

2.2.3 Amniotic✓ fluid (1)

2.2.4
- Allows for free movement✓ of the foetus
- Protects the foetus against mechanical injury✓ /acts as a shock absorber
- Prevents dehydration✓ of the foetus
- Prevents temperature changes✓ Any (3)

(Mark first THREE only) **(9)**

2.3 2.3.1
(a) 36,2✓˚C (1)
(b) Day 16✓ (1)

2.3.2
- Body temperature increased above basal body temperature✓ / 36.2˚C
- (immediately) after day 16✓ (2)

2.3.3
- The corpus luteum is formed✓ after ovulation and
- it secretes progesterone✓ (2)

2.3.4
- Physical activity /increased cellular respiration changes body temperature✓✓

OR

- Low physical activity /cellular respiration prevents a change in body temperature✓✓ (2)

(8)

2.4 2.4.1 (a) P✓ and T✓ (2)
(Mark first TWO only)

(b) S✓ and R✓ (2)
(Mark first TWO only)

2.4.2 Cochlea✓ (1)

2.4.3
- They convert the stimulus /pressure waves to an impulse✓ and
- transfer it to the auditory nerve✓ (2)

2.4.4
- Ossicles will not vibrate freely✓ /fewer /no vibrations will be carried to the oval window
- There is decreased amplification✓ of sound
- Fewer /no pressure waves will form in the cochlea✓
- Receptors in the cochlea will not be stimulated✓/stimulated less
- Less/no impulses will reach the cerebrum✓*

*1 Compulsory + Any 3 (4)

(11)

2.5 2.5.1 (a) Alcohol dose✓ (1)
(b) Reaction time✓ (1)

2.5.2
- Age✓ /30 years old
- Gender✓ /men
- Volunteers were tested over a period of 7 days✓
- Volunteers abstained from alcohol for 24 hours✓ prior to testing
- Volunteers had their reaction time measured 30 minutes after consuming the alcohol✓ /period from consumption to testing was the same Any (2)

(Mark first TWO only)

2.5.3
- Use more than 2 volunteers✓ /increase the number of volunteers
- Repeat the investigation✓ / take multiple readings for the same dose (2)

(Mark first TWO only)

2.5.4
- To ensure that there is no alcohol in the body✓ and
- that only the alcohol given on the day is tested for✓ (2)

2.5.5 (93 x 600)✓ = 55 800✓mg (2)

2.5.6 Higher doses of alcohol increase the reaction time✓✓ (2)

(12)

[50]

QUESTION 3

3.1 3.1.1 (a) B✓ (1)
(b) A✓ (1)

3.1.2 It ensures that nerve impulses are transmitted in one direction✓ (1)

3.1.3 (a) - It is a rapid✓ /automatic reaction to a stimulus
- that protects the body✓ from damage (2)

(b) - No impulse will be transmitted from the receptor✓
- to the spinal cord✓ /interneuron and
- the effector will not be stimulated✓ (3)

3.1.4

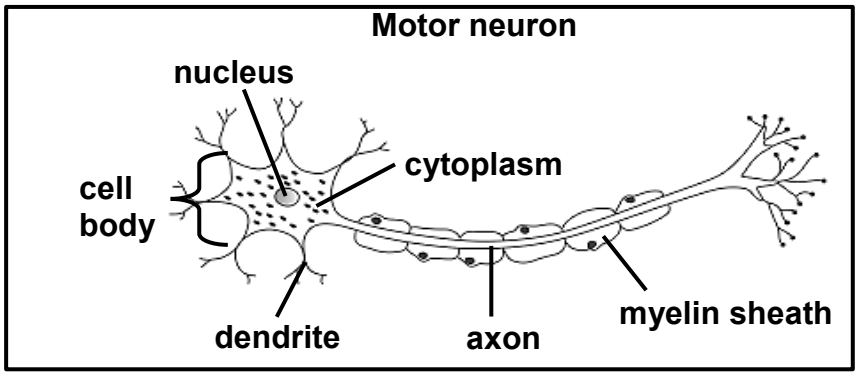


Diagram of a motor neuron	(D)	1
Correct caption		1
Any three correct labels		3

(5)
(13)

3.2 3.2.1 (a) Islets of Langerhans✓ (1)
(b) A high concentration of glucose in the blood✓ (1)

3.2.2 - They secrete hormones✓ /insulin /glucagon
- directly into the blood✓ /has no ducts (2)

3.2.3 - It stimulates the conversion of glucose to glycogen✓ and it
- promotes the absorption /usage of glucose by the cells✓ (2)

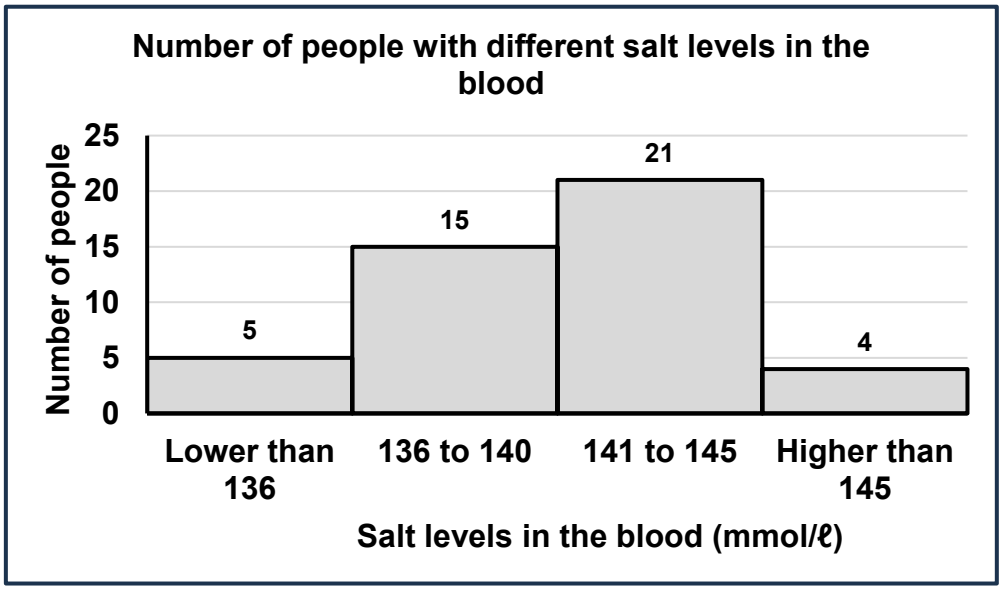
3.2.4 - It delivers insulin specifically according to the glucose level✓
- to allow for better blood glucose management✓ /regular dosing (2)
(8)

3.3 - (Cold) receptors in the skin convert the stimulus to an impulse✓which
- is sent to the hypothalamus✓ that
- stimulates vasoconstriction in the skin✓ /stimulates blood vessels of the skin to constrict
- Less blood flows to the skin✓ /sweat glands
- Less heat is lost✓(from the skin) through radiation
- The sweat glands are stimulated to produce less sweat✓ and
- less heat is lost through evaporation✓ of sweat Any **(6)**

3.4 3.4.1 (a) 4✓ (1)
(b) 36✓ (1)

3.4.2
- Receptor cells detect the low salt level✓
- The adrenal glands are stimulated✓ and
- more aldosterone is secreted✓
- In the renal tubules✓
- the reabsorption of salt /sodium is increased✓
- into the surrounding blood capillaries✓
- Less salt is excreted✓ Any (6)

3.4.3



(6)
(14)

Criteria for the assessing of the graph:

Criteria	Elaboration	Mark
Correct type of graph (**T**)	Histogram drawn	1
Caption of graph (**C**)	Both variables included	1
Axes labels (**L**)	X- and Y-axis correctly labelled and correct unit for X-axis	1
Scale for X- and Y-axes (**S**)	X-axis - equal width of bars with no spaces Y-axis – correct scale	1
Plotting (**P**)	1 to 3 coordinates plotted correctly All four coordinates plotted correctly	1 2

If a bar 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 with axes, then:
  - Marks will be lost for labels and scale
  - Plotting can get credit if coordinates are correct for given labels

3.5	3.5.1	Phototropism✓	(1)
	3.5.2	B✓	(1)
	3.5.3	- All the seedlings grew straight up✓ /showed no phototropism - because they were evenly exposed to light✓ /not exposed to unilateral light / equal distribution of auxins	(2)
	3.5.4	- The seedlings/stems grew/bend to the left✓/towards light - because they were exposed to light from one side✓/unilateral light - Auxins diffuse to the right✓/dark side of the seedlings - The high concentration of auxins on the right✓ /dark side - stimulates cell elongation✓/cell division/growth on that side	(5) **(9)** **[50]**

TOTAL SECTION B: 100
GRAND TOTAL: 150