education

Department of Education
FREE STATE PROVINCE

GRADE 12

LIFE SCIENCES P1

JUNE 2024

MARKS: 143

MARKING GUIDELINES

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 the 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 the 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 the sequence and links become correct again, resume credit.

9. **Non–recognised abbreviations**
   Accept if first defined in the 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, but the wrong number is given, it is acceptable.

11. **If the 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 memo discussion 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. Memorandum 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 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.

19. **Changes to the memorandum**
No changes must be made to the memorandum. The provincial internal moderator must be consulted.

SECTION A

QUESTION 1

1.1	1.1.1	C✓✓		
	1.1.2	C✓✓		
	1.1.3	A✓✓		
	1.1.4	D✓✓		
	1.1.5	A✓✓		
	1.1.6	C✓✓		
	1.1.7	D✓✓		
	1.1.8	C✓✓		
	1.1.9	B✓✓		
	1.1.10	B✓✓	(10 x 2)	**(20)**
1.2	1.2.1	Choroid✓		
	1.2.2	Parasympathetic✓		
	1.2.3	Tympanic✓membrane		
	1.2.4	Meninges✓		
	1.2.5	Cervix✓		
	1.2.6	Yellow spot✓/fovea		
	1.2.7	Acrosome✓		
			(7 x 1)	**(7)**
1.3	1.3.1	B only✓✓		
	1.3.2	A only✓✓		
	1.3.3	A only✓✓	(3 x 2)	**(6)**
1.4	1.4.1 (a)	B✓ Prostate gland✓		(2)
	1.4.2 (b)	D✓ Urethra ✓		(2)
	1.4.2 (a)	Seminal vesicle✓		(1)
	1.4.2 (b)	Testosterone✓		(1)
	1.4.3	Spermatogenesis✓		(1) **(7)**
1.5.	1.5.1 (a)	C✓ Sensory neuron✓		(2)
		E✓ Interneuron✓/connector neuron		(2)
	1.5.2	Reflex action✓		(1)
	1.5.3	(a) Multiple sclerosis✓/MS		(1)
		(b) The myelin sheath✓ is damaged✓		(2)
	1.5.4	The muscle will not receive the signal✓ to contract✓		(2) **(10)**
			TOTAL SECTION A:	**50**

SECTION B

QUESTION 2

2.1	2.1.1	Internal	(1)
	2.1.2	There is a gestation period✓ of 21 days before she lays her eggs✓/ after mating she builds a nest	(2)
	2.1.3	Altricial✓	(1)
	2.1.4	The young are: - Vulnerable - Blind - Hairless✓ **(Mark first TWO only)**	(2)
	2.1.5	- They feed their young by giving them concentrated milk✓ - By sweating it out✓/through their sweat glands	(2) **(8)**
2.2	2.2.1	A✓ Chorionic villi✓ X✓ Endometrium✓	(4)
	2.2.2	Umbilical cord✓	(1)
		- It contains two umbilical arteries✓ - which carry deoxygenated blood✓/waste products - from the foetus to the placenta✓ and - one umbilical vein✓ - that carries oxygenated blood✓nutrients - from the placenta to the foetus✓ Any	(5)
	2.2.3	It acts as a shock absorber to protect the foetus against mechanical injury✓	(1) **(11)**
2.3	2.3.1	(a) LH✓✓	(2)
		(b) ~~LH✓✓~~	(2)
	2.3.2	The female is pregnant✓✓	(2)
	2.3.3	- High levels of progesterone✓ - inhibits the release of FSH✓ which - which is responsible for the formation of a Graafian follicle✓ - which secretes oestrogen✓ Any	(3) **(7)**

2.4	2.4.1	(a) Zinc supplement✓	(1)
		(b) Levels of testosterone✓in the blood	(1)
	2.4.2	To serve as a control to compare the results before and after the zinc supplements were given✓✓	(2)
	2.4.3	Reliability was ensured by using a large sample size, which is 60 males✓✓	(2)
	2.4.4	- Type of zinc supplement✓ - Concentration of zinc - Volume of zinc✓ - Way of administering the zinc✓ - Time of administering the zinc supplement✓ Any **(Mark first TWO only)**	(2)
	2.4.5	Zinc supplements increases the testosterone levels in the blood✓✓	(2) **(10)**
2.5	2.5.1	Hypermetropia✓/long-sightedness	(1)
	2.5.2	- The focal length of lens is too long✓ /lies behind the retina - Decrease in the length of the eyeball✓/short eyeball - Abnormally flat cornea✓ **(Mark first THREE only)**	(3)
	2.5.3	Convex✓ lenses	(1)
	2.5.4	Binocular vision✓/stereoscopic vision	(1)
	2.5.5	(a) The pupil will become larger✓/wider /the diameter of the pupil will be larger	(1)
		(b) The iris✓	(1)
		(c) - The circular muscles✓ - relax✓ - The radial muscles✓ - contract✓	(4) **(12)**
		TOTAL QUESTION: 2	**48**

QUESTION 3

3.1 3.1.1 (a) C✓- Auditory nerve✓ (2)

(b) A✓- Auditory canal✓ (2)

3.1.2
- Air is drawn into the middle ear✓
- through the Eustachian tube✓ to
- equalise the pressure on either side of the tympanic membrane✓ Any (2)

3.1.3
- The change in the speed and direction of the head✓
- stimulates the cristae✓ in the
- semi-circular canals✓/ampulla
- The stimuli are converted into impulses✓
- and transported along the vestibular branch✓ of
- auditory nerve✓
- to the cerebellum to be interpreted✓
- Impulses are send to the muscles to recover the balance Any (6)

(12)

3.2 3.2.1 (a) Motor✓/multipolar (1)

(b) Sensory✓/unipolar/monopolar (1)

3.2.2

Sensory	Motor
Transports the impulse from the receptor to central nervous system✓	Transports the impulse from the central nervous system to the effectors✓
Unipolar✓	Multipolar✓

(Mark first TWO only) +1 Mark for table (5)

3.2.3 (a) Dendrite✓ – transports impulses to the cell body✓ (2)

(b) Axon✓ (1)

(10)

3.3	3.3.1	Adrenal✓ gland	(1)
	3.3.2	(a) Aldosterone✓	(1)
		(b) Adrenalin✓	(1)
	3.3.3	[(1- 0,5) /0,5] ✓ x 100✓ = 100%✓	(3)
	3.3.4	- ~~Increased salt concentration in the blood✓~~ - ~~Decreases the secretion of aldosterone✓~~ - ~~This causse less salt to be reabsorbed✓/more salt to be excreted~~ - ~~which reduces water reabsorption✓~~ - ~~More water remains in the renal tubules✓~~ - ~~Resulting in more urine formed✓~~ ~~Any~~	~~(5)~~ **(6)**
3.4	3.4.1	(a) Hypophysis✓ pituitary gland	(1)
		(b) Thyroid gland✓	(1)
	3.4.2	Negative feedback mechanism✓	(1)
	3.4.3	(a) TSH✓	(1)
		(b) Thyroxin	(1)
	3.4.4	(a) Thyroid gland is stimulated✓ to secrete more✓ thyroxin	(2)
		(b) Less thyroxin✓ will be secreted✓/ by the thyroid gland	(2) **(9)**

`3.5	3.5.1	Hypothalamus✓		(1)
	3.5.2	10 min✓		(1)
	3.5.3	Diagram 1✓		(1)
	3.5.4	- Due to rise in body temperature✓ - the blood vessels widen✓/vasodilation - More blood flows to the skin surface✓ - resulting in more heat loss✓ - More blood flows to the sweat glands✓ - resulting in increased sweat secretion✓ - More sweat evaporates from skin✓/ more heat loss	Any	(5) **(8)**
				45
			TOTAL SECTION B:	**93**
			GRAND TOTAL:	**143**