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**AMENDMENT TO MARKING GUIDELINES  
PREPARATORY EXAMINATIONS – 2024**

**ATTENTION: THE CHIEF INVIGILATOR**

<b>SUBJECT / VAK</b>	<b>LIFE SCIENCES / LEWENSWETENSKAPPE</b>
<b>PAPER / VRAESTEL</b>	<b>1</b>
<b>DATE OF EXAMINATION / DATUM VAN EKSAMEN</b>	<b>6 SEPTEMBER 2024</b>

The errata for the Marking Guidelines of LIFE SCIENCES P1 has reference.

There was an anomaly in the manner in which **Question 3.4.3** was presented on both the English and Afrikaans versions of the question paper. This matter was addressed at the Marking Standardisation Meeting.

To ensure that candidates are not disadvantaged and prejudiced in way, you are advised to please ask your Life Sciences educator(s) to **ignore Question 3.4.3** when marking.

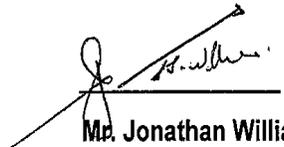
In other words, the paper must be marked out of a total of 145 instead of 150 and then the learners' marks must be converted to a mark out of 150. E.g., Should a learner attain 85/145 then that mark is recalculated as 88/150.

<p><b>Use the formula:</b> <math>\frac{a}{145} \times 100 = b</math>. Then, <math>\frac{b}{100} \times 150 = c</math></p>
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<p><i>C is the mark that is entered into SASAMS out of 150.</i></p>
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Please ensure that BOTH marks (  $\frac{85}{145}$  AND  $\frac{88}{150}$  ) are reflected on the cover

page of candidates' answer scripts.

  
**Mr. Jonathan Williams**

**DIRECTOR: EXAMINATIONS MANAGEMENT**

**6 SEPTEMBER 2024**

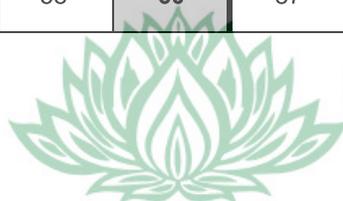


Please note, the paper is to be marked out of 145 not 150.

USE THE CONVERSION TABLE BELOW

145 – 150

145	150	145	150	145	150	145	150	145	150
1	1	30	31	59	61	88	91	117	121
2	2	31	32	60	62	89	92	118	122
3	3	32	33	61	63	90	93	119	123
4	4	33	34	62	64	91	94	120	124
5	5	34	35	63	65	92	95	121	125
6	6	35	36	64	66	93	96	122	126
7	7	36	37	65	67	94	97	123	127
8	8	37	38	66	68	95	98	124	128
9	9	38	39	67	69	96	99	125	129
10	10	39	40	68	70	97	100	126	130
11	11	40	41	69	71	98	101	127	131
12	12	41	42	70	72	99	102	128	132
13	13	42	43	71	73	100	103	129	133
14	14	43	44	72	74	101	104	130	134
15	15	44	45	73	75	102	105	131	135
15	16	44	46	73	76	102	106	131	136
16	17	45	47	74	77	103	107	132	137
17	18	46	48	75	78	104	108	133	138
18	19	47	49	76	79	105	109	134	139
19	20	48	50	77	80	106	110	135	140
20	21	49	51	78	81	107	111	136	141
21	22	50	52	79	82	108	112	137	142
22	23	51	53	80	83	109	113	138	143
23	24	52	54	81	84	110	114	139	144
24	25	53	55	82	85	111	115	140	145
25	26	54	56	83	86	112	116	141	146
26	27	55	57	84	87	113	117	142	147
27	28	56	58	85	88	114	118	143	148
28	29	57	59	86	89	115	119	144	149
29	30	58	60	87	90	116	120	145	150





# **PREPARATORY EXAMINATION**

## **2024**

### **MARKING GUIDELINES**

**LIFE SCIENCES (PAPER 1) (10831)**

11 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 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 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**  
It is acceptable if the answer fits into the correct sequence of questions, but the wrong number is given.
11. **If the language used changes the intended meaning**  
Do not accept.
12. **Spelling errors**  
Accept it if recognisable, 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 memo discussion meeting.
14. **If only a letter is asked for and only a name is given (and vice versa)**  
Do not credit.
15. **If units are not given in measurements**  
Candidates will lose marks. The memorandum will allocate marks for units separately.
16. Be sensitive to the **sense of an answer, which may be stated differently**
17. **Caption**  
All illustrations (diagrams, graphs, tables, etc.) must have a caption.
18. **Code-switching of official languages (terms and concepts)**  
A 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 applies 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.



**SECTION A****QUESTION 1**

- |     |        |  |          |                   |
|-----|--------|--|----------|-------------------|
| 1.1 | 1.1.1  | B ✓✓   |          |                   |
|     | 1.1.2  | A ✓✓   |          |                   |
|     | 1.1.3  | A ✓✓ or B ✓✓   |          |                   |
|     | 1.1.4  | C ✓✓   |          |                   |
|     | 1.1.5  | A ✓✓   |          |                   |
|     | 1.1.6  | A ✓✓   |          |                   |
|     | 1.1.7  | B ✓✓   |          |                   |
|     | 1.1.8  | B ✓✓   |          |                   |
|     | 1.1.9  | B ✓✓   |          |                   |
|     | 1.1.10 | A ✓✓   | (10 x 2) | <b>(20)</b>       |
| 1.2 | 1.2.1  | Thorns ✓/spikes/prickles   |          |                   |
|     | 1.2.2  | Binocular ✓ vision   |          |                   |
|     | 1.2.3  | Prolactin ✓  |          |                   |
|     | 1.2.4  | Astigmatism ✓  |          |                   |
|     | 1.2.5  | Phototropism ✓   |          |                   |
|     | 1.2.6  | Blastocyst/Blastula ✓  | (6 x 1)  | <b>(6)</b>        |
| 1.3 | 1.3.1  | B Only ✓✓  |          |                   |
|     | 1.3.2  | A Only ✓✓  |          |                   |
|     | 1.3.3  | Both A and B ✓✓ or B only ✓✓                                       | (3 x 2)  | <b>(6)</b>        |
| 1.4 | 1.4.1  | (a) C ✓ Egg shell/shell ✓<br>(b) F ✓ Yolk ✓<br>(c) E ✓ Allantois ✓ |          | (2)<br>(2)<br>(2) |
|     | 1.4.2  | (a) (Diagram) A ✓<br>(b) (Diagram) A ✓                             |          | (1)<br>(1)        |
|     |        |  |          | <b>(8)</b>        |

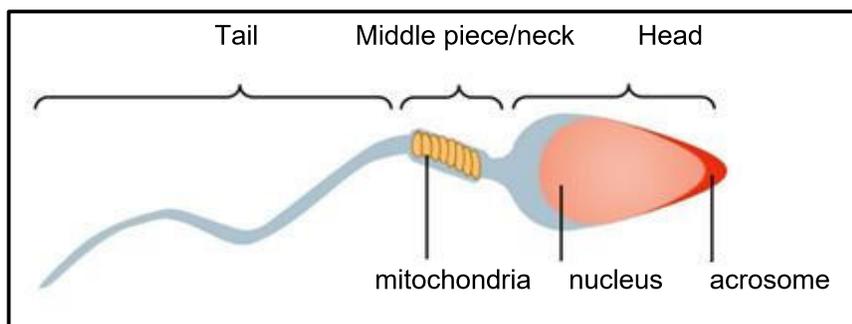


- |     |       |   |             |
|-----|-------|---|-------------|
| 1.5 | 1.5.1 | (a) Amnion ✓  | (1)         |
|     |       | (b) Uterus ✓/uterus wall  | (1)         |
|     |       | (c) Cervix ✓  | (1)         |
|     |       | (d) Foetus ✓  | (1)         |
|     | 1.5.2 | (a) Vagina ✓  | (1)         |
|     |       | (b) Placenta ✓  | (1)         |
|     |       | (c) Umbilical vein ✓ /umbilical cord  | (1)         |
|     | 1.5.3 | Muscle ✓/myometrium   | (1)         |
|     | 1.5.4 | 2, 4, 7, 8 ✓✓   |             |
|     |       | <b>All numbers must be included to earn both marks<br/>numbers can be in any order.</b> | (2)         |
|     |       |   | <b>(10)</b> |

**TOTAL SECTION A: 50**

**SECTION B****QUESTION 2**

- 2.1 2.1.1 (a) 1 ✓ – FSH✓/Follicle stimulating hormone (2)  
 (b) 4 ✓ – Oestrogen ✓ (2)
- 2.1.2 (a) – Secretes progesterone ✓  
 – To maintain the endometrium ✓ (2)
- (b) – The pituitary gland/hypophysis ✓  
 – secretes LH ✓/luteinising hormone  
 – which stimulates the conversion of the ruptured Graafian follicle ✓  
 into the corpus luteum (3)
- 2.1.3 – The corpus luteum/structure 3 is getting smaller ✓/degenerating  
 – Progesterone/hormone 5 levels are dropping ✓/decreasing  
 – FSH/hormone 1 levels are increasing on days 27 – 28 ✓  
**(Mark first TWO only)** (2)  
**(11)**
- 2.2 2.2.1 (a) Vas deferens ✓ (1)  
 (b) Penis ✓ (1)
- 2.2.2 – Protection of testes ✓  
 – Because they are held outside the body ✓
- OR**
- Holds the testes outside of the body ✓  
 – to ensure they are at a lower temperature for optimum/healthy sperm cell  
 production ✓ (2)
- 2.2.3 **Spermatogenesis** ✓\*  
 – Under the influence of testosterone ✓  
 – diploid cells in the seminiferous tubules ✓ of the testes undergo  
 meiosis ✓  
 – to form haploid sperm cells ✓  
**\* compulsory mark and any THREE points** (4)

2.2.4 Diagram of a sperm cell

The caption must include sperm cell	C ✓	(1)
The diagram contains a head with an acrosome and nucleus, a middle piece and a tail	D ✓	(1)
The correct proportion of the head, middle portion and tail	P ✓	(1)
Labels: any two correct labels	L ✓✓	(2)
<b>TOTAL:</b>		<b>5</b>

(5)

2.2.5 Epididymis → vas deferens /Sperm duct → urethra ✓✓  
**If the word testes is mentioned, no marks to be awarded**

(2)

**(15)**

2.3 2.3.1 Gibberellins ✓

(1)

- 2.3.2
- Same height of corn seedling/All initial heights were 1 cm
  - Same species were used
  - Same number of seedlings in each sample
  - Same amount of water was given
  - Same amount of hormone mixture in water/1,00 micrograms of hormone
  - Same period of 15 days for the experiment

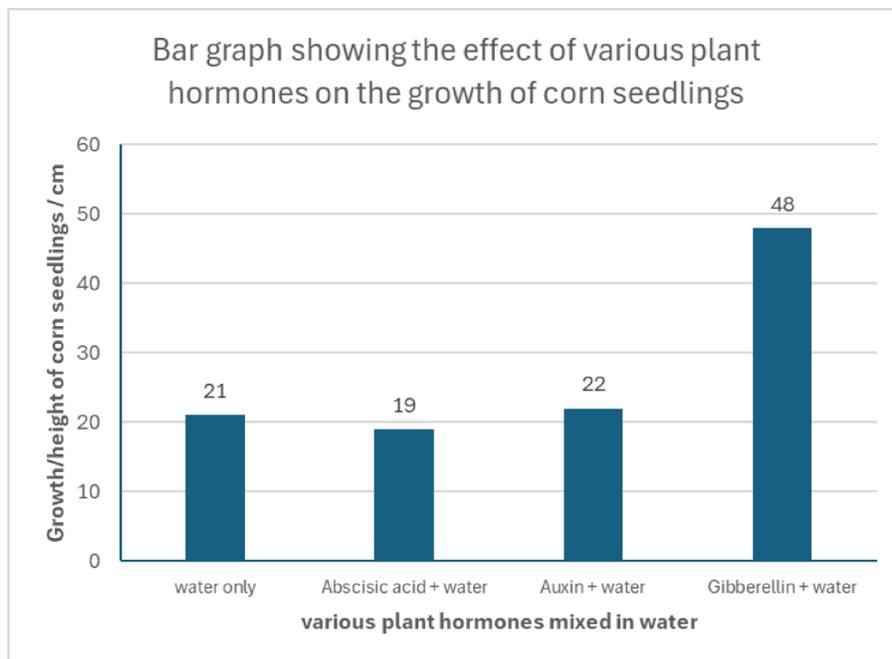
**(Mark first TWO)****(Do not accept same environmental conditions)**

(2)

- 2.3.3
- Promotes dormancy of seeds ✓/inhibits germination of seeds
  - Inhibits growth of apical buds ✓
  - Induces flowering in some plants ✓
  - Promotes ageing of leaves ✓
  - Stimulates the abscission/falling of leaves / fruit ✓
  - Stimulates closing of stomata ✓

Any TWO (2)

2.3.4

**Criteria assessment of the graph**

CRITERIA	ELABORATION	SYMBOL	MARKS
Correct type of graph	Bar graph drawn	(T)	1
Caption of graph	Both variables included (the effect of different hormones on the growth /height of corn seedlings)	(C)	1
Axes labels	Correct label and unit for X- and Y-axes	(L)	1
Scale of X- and Y- axes	Equal spacing and correct scaling on X- and Y-axes	(S)	1
Plotting of points	1 – 3 bars plotted accurately All 4 bars plotted accurately	(P)	1 2
<b>TOTAL:</b>			<b>6</b>

**NOTE:** If the wrong type of graph is drawn, marks will be lost for “correct type of graph”.

(6)  
(11)

- 2.4 2.4.1 (a) Vitreous humour ✓ (1)  
(b) Optic nerve ✓ (1)

- 2.4.2
- Transparent ✓ allows light to enter the eye and reach the retina ✓
  - Causes refraction /bends light ✓ toward the yellow spot ✓/retina for clear vision
  - Both are convex ✓ to allow for refraction ✓

(Mark first ONE only)

(2)

- 2.4.3
- Light stimulates the cones/photoreceptor in part G /retina/yellow spot ✓
  - to convert light to impulses ✓
  - Impulses are transmitted via H/optic nerve ✓
  - to the cerebrum ✓ to be interpreted
- (4)

2.4.4

<b><u>Table showing structural differences in the eye for near and far vision.</u></b>	
<b>Object closer than 6 m</b>	<b>Object further than 6 m</b>
Ciliary muscle contracts ✓	Ciliary muscle relaxed ✓
Suspensory ligaments become slack/ slacken ✓	Suspensory ligaments tighten/ become taut ✓
Lens more convex ✓	Lens less convex ✓
T ✓ table including column headings	
<b>Mark first TWO only</b>	

(5)  
(13)  
[50]

### QUESTION 3

- 3.1 3.1.1 2,2 ✓ hours ✓ (accept between 2,1 and 2,5 hours) (2)
- 3.1.2 Time it took for the blood alcohol levels to return to normal ✓/Blood alcohol concentration (1)
- 3.1.3
- To ensure that all participants started the investigation with no alcohol in their blood ✓
  - To ensure the validity ✓ of the investigation.
  - To ensure that all participants begin the investigation with the same/zero blood alcohol concentration ✓
  - To allow enough time for blood alcohol concentration to reach zero ✓
- (Mark first TWO only)** (2)
- 3.1.4 (a)
- Ensure that no participant is pregnant or breastfeeding ✓
  - Ensure the participants are not allergic to alcohol ✓/no adverse reactions to alcohol
  - Ensure participants do not drive ✓/operate heavy machinery/engage in activities that require concentration during and after the investigation
- (Mark first TWO only)** (2)



- (b) – Ask participants for permission to be part of the investigation ✓  
 – Decide how many participants to include ✓  
 – Decide on the age of participants ✓  
 – Decide on the weight of participants ✓  
 – Decide on the volumes of alcohol to be consumed ✓  
 – Decide on equipment ✓/how to monitor blood alcohol concentration  
 – Decide on a suitable venue for the investigation ✓  
 – Decide on how to record data ✓  
 – Decide on a time to do the investigation ✓  
 – Ensure participants do not have a history of alcohol abuse ✓  
**(Mark first TWO only)** (2)
- 3.1.5 (a) No ✓ (1)  
 (b) – Only 1 participant per volume of alcohol ✓✓  
 – The investigation was not repeated ✓✓  
**(Mark first ONE only)** (2)
- 3.1.6 The higher the volume of alcohol consumed the longer it takes to reduce blood alcohol concentration ✓✓ (2)  
**(14)**
- 3.2 3.2.1 (a) Tympanic membrane ✓ (1)  
 (b) Cochlea ✓/organ of Corti (1)  
 (c) Eustachian tube ✓ (1)  
 (d) Auditory canal ✓ (1)
- 3.2.2 • The AirPods block the auditory canal ✓ and prevent the sound waves from the environment from reaching the tympanic membrane ✓  
 • The sound from the AirPods is too loud ✓ and the environmental noise is too quiet/soft by comparison, so it is not detected ✓  
**(Each point must have a linked cause and effect statement.)** (4)
- 3.2.3 (a) Fred ✓ (1)  
 (b) (Fred's) volume is 92 dB ✓/over 80 dB  
 Which is more than the safe level ✓ of 80 dB (2)  
**(11)**
- 3.3 3.3.1 (a) Aldosterone ✓ and adrenalin ✓ (2)  
 (b) Testosterone ✓ (1)
- 3.3.2 **Pituitary gland ✓\*/hypophysis** is stimulated ✓  
 To secrete less TSH into the blood ✓  
 Low TSH levels stimulates the thyroid gland ✓  
 to secrete less thyroxin ✓  
 Thyroxin levels decrease ✓/ normal  
 \* ✓ **Compulsory mark and FOUR other points** (5)  
**(8)**



- 3.4 3.4.1 (a) Insulin ✓  
(b) Blood sugar level starts decreasing ✓ (2)
- 3.4.2 – Maintenance of a constant internal environment within the body ✓  
– Regardless of changes in the internal or external environment ✓ (2)
- 3.4.3 QUESTION REMOVED, THE PAPER WILL BE MARKED OUT OF 145 (5)**
- (4)
- 3.5 3.5.1 Hypothalamus ✓ (1)
- 3.5.2
- the body temperature decreases ✓ because
  - Blood vessels of the skin dilate ✓/vasodilation
  - More blood flows to the surface of the skin ✓
  - More heat is lost from the surface of the skin ✓
  - More blood flows to the sweat glands ✓
  - to release more sweat ✓/to become more active
  - Evaporation of sweat cools the skin ✓
- MARK ANY (5)**
- 3.5.3 Increase in cellular respiration ✓ in muscles  
produces more energy ✓ as heat (2)
- (8)**  
**[45]**

**TOTAL SECTION B: 95**

**TOTAL: 145**

## ADDENDUM

question	Accept
1.2.2	Stereoscopic / 3D vision
1.5.1 (a)	Amniotic sac
1.5.1 (b)	Uterine wall
2.1.2 (a)	To maintain the endometrium ✓/further thicken the endometrium
2.2.1 (a)	Sperm duct
2.2.2	2 <sup>o</sup> C lower than body temperature /35°C
2.2.5	If learners included outside penis /into vagina after the urethra they can be awarded the marks.
2.3.2	The word SAME must be included in the answers to award mark