GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PREPARATORY EXAMINATION

2025

MARKING GUIDELINES

LIFE SCIENCES (PAPER 1) (10831)

13 pages

Additional Notes to the marking Guidelines
Life Sciences P1

Question 1:

1.5.1 (c) – Accept: Hammer, Anvil and Stirrup (However, scientific terms should be taught)

1.7.2 (b) – Accept: Vasopressin

Question 2:

2.2.4 – Accept: Between 4 and 5 days.

2.4.1 – Accept: Between the uterus and the vagina

2.4.3 – Learners will lose marks for C and P if calculations are incorrect.

2.6 – if learners use the word/s **perilymph** and **endolymph** – Credit the learner in place of the word **fluid** in bullet 2.

Question 3

3.4.4 – accept ($\frac{23}{7}$)

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 C ✓✓

1.1.2 B ✓✓

1.1.3 A ✓✓

1.1.4 B ✓✓

1.1.5 A ✓✓

1.1.6 D ✓✓

1.1.7 B ✓✓

1.1.8 D ✓✓

(8 x 2) **(16)**

1.2 1.2.1 Neurotransmitter ✓/acetylcholine/dopamine/seratonin

1.2.2 Prolactin ✓

1.2.3 Cranium ✓

1.2.4 Amniotic ✓ fluid

1.2.5 Negative feedback ✓

(5 x 1) **(5)**

1.3 1.3.1 A only ✓✓

1.3.2 B only ✓✓

1.3.3 None ✓✓

(3 x 2) **(6)**

1.4 1.4.1 Umbilical cord ✓ (1)

1.4.2 Oxygen✓ /O_2
Nutrients ✓ / glucose / $C_6H_{12}O_6$ / amino acids / vitamins / minerals
Water ✓ / H_2O
Antibodies ✓
Mark first TWO (2)

1.4.3 (a) Placenta ✓ (1)

(b) Diffusion ✓ (1)
(5)

1.5	1.5.1	(a)	Pinna ✓	(1)
		(b)	Organ of Corti ✓/ Cochlea	(1)
		(c)	Ossicles ✓/Malleus, incus and stapes **Note: If ossicles are named, all three bones must be given, in any order, for 1 mark.**	(1)
	1.5.2	(a)	Eustachian tube ✓	(1)
		(b)	Grommet ✓	(1) **(5)**
1.6	1.6.1	(a)	C ✓ Yellow spot ✓/ Fovea / Fovea centralis	(2)
		(b)	G ✓ Cornea ✓	(2)
		(c)	B ✓ choroid ✓	(2)
	1.6.2		E ✓ and I ✓ **(Any order, mark first TWO only)**	(2) **(8)**
1.7	1.7.1		Osmoregulation ✓	(1)
	1.7.2	(a)	Pituitary ✓ gland / Hypophysis	(1)
		(b)	ADH ✓/ Antidiuretic hormone	(1)
		(c)	Kidney ✓	(1)
	1.7.3		Concentrated ✓	(1) **(5)**
			TOTAL SECTION A	**50**

SECTION B

QUESTION 2

2.1 2.1.1
- fusion of (male and female) gametes ✓
- inside the female's reproductive organ ✓ /body (2)

2.1.2 At birth/after hatching, the puggle:

- has no spines ✓ sticking out from its skin/naked
- eyes are closed ✓
- remains in its mother's pouch ✓/does not walk on its own/protection from predators
- feeds from milk from the mother ✓/does not look for its own food
- is kept inside a burrow ✓ for 7 months/protection from predators
- requires a large amount of parental care ✓

NOTE: Protection from predators can only be referred to ONCE
(Mark first TWO only) (2)

2.1.3

Vivipary	Ovipary
The embryo develops inside the female's reproductive organs✓/uterus	The embryo develops outside of the female's body in an amniotic egg ✓/The eggs are laid
The embryo receives a continuous supply of food/nutrients from the mother through the placenta ✓	Embryo receives a fixed amount of food/nutrients from the yolk ✓
Mother gives birth to live young ✓	Young hatch from an egg ✓
Waste from the embryo is removed through the placenta ✓ and is excreted from the mother's body.	Waste collects in the allantois ✓
Gaseous exchange occurs at the placenta ✓	Gaseous exchange occurs through the chorion ✓/shell/ outer covering
The embryo is protected inside the mother's body ✓	The embryo is protected by a shell ✓

(Mark first TWO comparisons only)
Table: columns with headings **T** ✓ (5)
(9)

2.2 2.2.1 (a) Graafian Follicle ✓ (1)

(b) Corpus luteum ✓ (1)

2.2.2 (a) (Day) 14 ✓ (1)

(b) Graafian follicle/part A has ruptured ✓/ovum has been released from the Graafian follicle/part A (1)

2.2.3 (a) Progesterone ✓ (1)

(b)
- Maintains the thickness of the endometrium ✓/ causes the endometrium to become more vascular and glandular
- to prepare it for the implantation of the blastocyst ✓/ blastula /embryo (2)

2.2.4 4 days ✓ (1)

2.2.5
- Stimulates the development ✓/maturation
- of a primary/immature follicle ✓
- into a Graafian follicle ✓ (3)

(11)

2.3 2.3.1 (a) Urethra ✓ (1)

(b) Cowper's gland ✓ (1)

2.3.2 (a) Vas deferens ✓ (1)

(b) Penis ✓ (1)

2.3.3
- nutrients ✓ sugars/protein that provide energy for the sperm cells to move ✓
- alkaline fluid ✓ that neutralises the acid in the urethra/vagina ✓
- mucus ✓ for easier movement of sperm cells ✓/slippery tubes for easier passage of sperm cells

(**Mark first TWO only: Named secretion and its function)** (4)

(8)

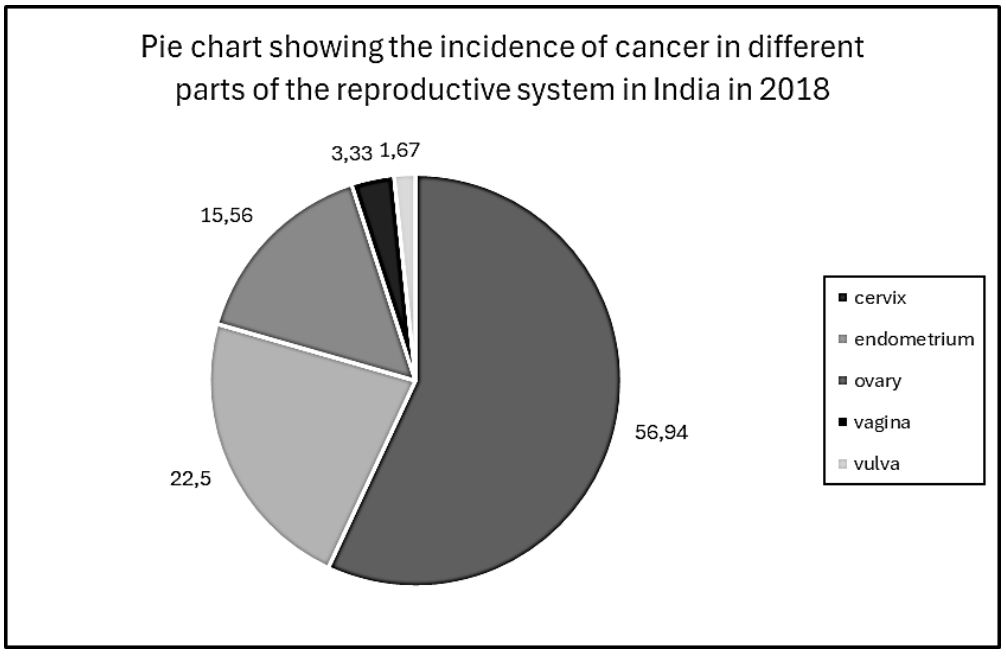
2.4 2.4.1 At the bottom/base/lower opening of the uterus ✓/top of the vagina (1)

2.4.2 Get permission from the participants ✓
Get permission from the hospital ✓
Decide:
- which disease to study ✓/type of cancer
- how to determine if the patient has cancer ✓
- how many participants to include in the study ✓/on the sample size
- how to collect/organise the data ✓
- the duration of the study ✓
- which hospitals to use ✓

(**Mark first TWO only)**
(NOTE: Ensure that statements are written in the future tense.) (2)

2.4.3 **Pie chart Calculations:**

Cervix:	56,94 / 100	x 360	= 204,98º	= 205º
Endometrium:	22,50 / 100	x 360	= 81º	
Ovary:	15,56 / 100	x 360	= 56,01º	= 56º
Vagina:	3,33 / 100	x 360	= 11,98º	= 12º
Vulva:	1,67 / 100	x 360	= 6,01º	= 6º



(6)

Criteria	Elaboration	Symbol	Mark
Type	A pie chart is drawn: symmetrical circle drawn showing at least one segment	**T**	1
Caption	Correct caption including both variables.	**H**	1
Calculations	1– 4 calculations correct	**C**	1
	All 5 calculations are correct.		2
Proportions	1–3 sectors correct with a key/sectors labelled	**P**	1
	All sectors correct with a key / sectors labelled		2
		TOTAL:	**6**

(9)

2.5 2.5.1
- Uncorrected refractive error with cataract ✓
- Macular degeneration ✓
- Infectious disease ✓
- Vitamin A deficiency ✓

(Mark first TWO only) (2)

2.5.2
- Eyeball is longer than normal/inability of the lens to become less convex ✓/lens stays more convex
- Lens will bend/refract the light too much ✓/refractive power too high/light is focused in front of/before the retina (2)

2.5.3 (a) Biconcave ✓ /concave (1)

(b)
- Causes light to diverge before entering the eye ✓
- Reduces the angle that the light bends in the eye ✓/light rays are refracted less in the eye
- Ensures that light converges on the retina ✓/yellow spot / fovea / fovea centralis
- to form a clear image. ✓

any (2)
(7)

2.6 As the dancer spins her body:
- there is a change in the speed/direction ✓
- causing movement of the fluid in the inner ear ✓
- in the semi-circular canals ✓
- to stimulate the cristae ✓
- to convert the stimulus into an impulse ✓
- which is conducted by the auditory nerve ✓/vestibular nerve which is part of the auditory nerve
- to the cerebellum ✓
- which sends impulses to skeletal muscles✓/proprioceptors restore balance

Any (6)
(6)

[50]

QUESTION 3

3.1 3.1.1 Central ✓ nervous system/ CNS (1)

3.1.2 Functional connection between the axon of one neuron and the dendrite of another neuron ✓✓ (2)

3.1.3 (a) interneuron ✓ (1)

(b) sensory ✓ neuron (1)

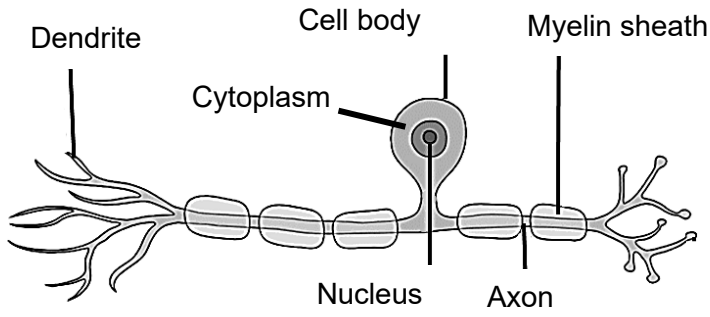
3.1.4 A reflex arc is the path taken by an impulse ✓ in response to a stimulus/ within a reflex action,
a reflex action is a quick and automatic/involuntary response ✓ to a stimulus (2)

3.1.5 G → A →D ✓✓ (2)

3.1.6
- The person would feel the heat ✓
- but will be unable to move their muscle ✓/hand away
- resulting in damage/burning/injury to the skin✓/tissues/finger/hand (3)

3.1.7

Diagram of a sensory neuron



Criteria	Elaboration	Symbol	Mark
Caption	The correct caption is given	**C**	1
Drawing	Correct neuron drawing (accept diagram with or without myelin sheath)	**D**	1
Labels	Any three correct labels: Axon, dendrite, cell body, cytoplasm, myelin sheath, nucleus, cell membrane	**L**	3
		TOTAL:	**5**

(5)

(17)

3.2 3.2.1 Thermoregulation ✓ (1)

3.2.2 (a) Environmental temperature ✓ (1)

(b) Human core body temperature ✓ (1)

3.2.3
- **Ensure validity ✓***
- by ensuring that gender does not affect the results ✓
- by ensuring that the changes in the human core body temperature are due to the environmental temperature only ✓ and no other factor

(*compulsory mark + 1 other mark) (2)

3.2.4
- The investigation was done with a large sample of 26 participants ✓
- was repeated 3 times ✓
- an average was calculated. ✓

Any (2)

3.2.5
- Increased sweating ✓/sweat glands become more active
- Vasodilation of the blood vessels of the skin ✓ (2)

(9)

3.3 3.3.1
- Nerve damage ✓
- Kidney failure ✓
- Vision loss ✓

(Mark first TWO only) (2)

3.3.2 (a) (Too) High ✓ (1)

(b)
- It will stimulate cells to absorb more glucose ✓ to use for cellular respiration
- Insulin will stimulates the conversion of excess glucose into glycogen ✓ for storage
- In the liver ✓
- **Decreasing/lowers the blood glucose levels ✓*** until normal levels.

(1 compulsory mark + any two) (3)

(6)

3.4 3.4.1 A chemical messenger/messenger molecule that is secreted into the bloodstream ✓✓/ is responsible for chemical co-ordination that regulates activities in the body (2)

3.4.2 Adrenal ✓ gland (1)

3.4.3 (a) Sympathetic ✓ nervous system (1)

(b) It will decrease the amount of blood ✓ flow going towards the stomach, decreasing the amount of digestion taking place ✓/the digestion of food (2)

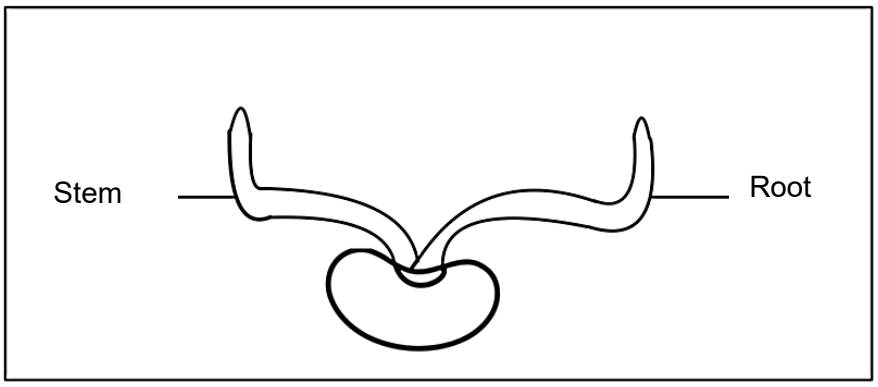
3.4.4 percentage increase = $\left(\frac{30-7}{7}\right)$ ✓ x 100 ✓ = 328,57 ✓ / 328,6 /329 % (3)
(9)

3.5 3.5.1 Growth/turning movement of a plant/part of a plant in response to a (external) stimulus ✓✓ (2)

3.5.2
- Auxins that are produced in the tips of roots and stems are removed ✓
- therefore, cannot diffuse/move through the stems and roots ✓/cannot interfere with the injected auxins ✓
- thereby eliminating the normal effects of auxins ✓/ensuring the effect of the auxins/growth direction is only due to injected auxins

Any (3)

3.5.3 Diagram showing the effect of auxins in the stem and root of a germinating seed (3)



Criteria	Elaboration	Symbol	Mark
Root	Correct drawing of growth of young root **growing upwards**	**R**	1
Stem	Correct drawing of growth of young stem **growing upwards**	**S**	1
Labels	Stem and root identified	**L**	1
		TOTAL	**(3)**

3.5.4 Gibberellins ✓ (1)
(9)
[50]

TOTAL SECTION B: 100

TOTAL: 150