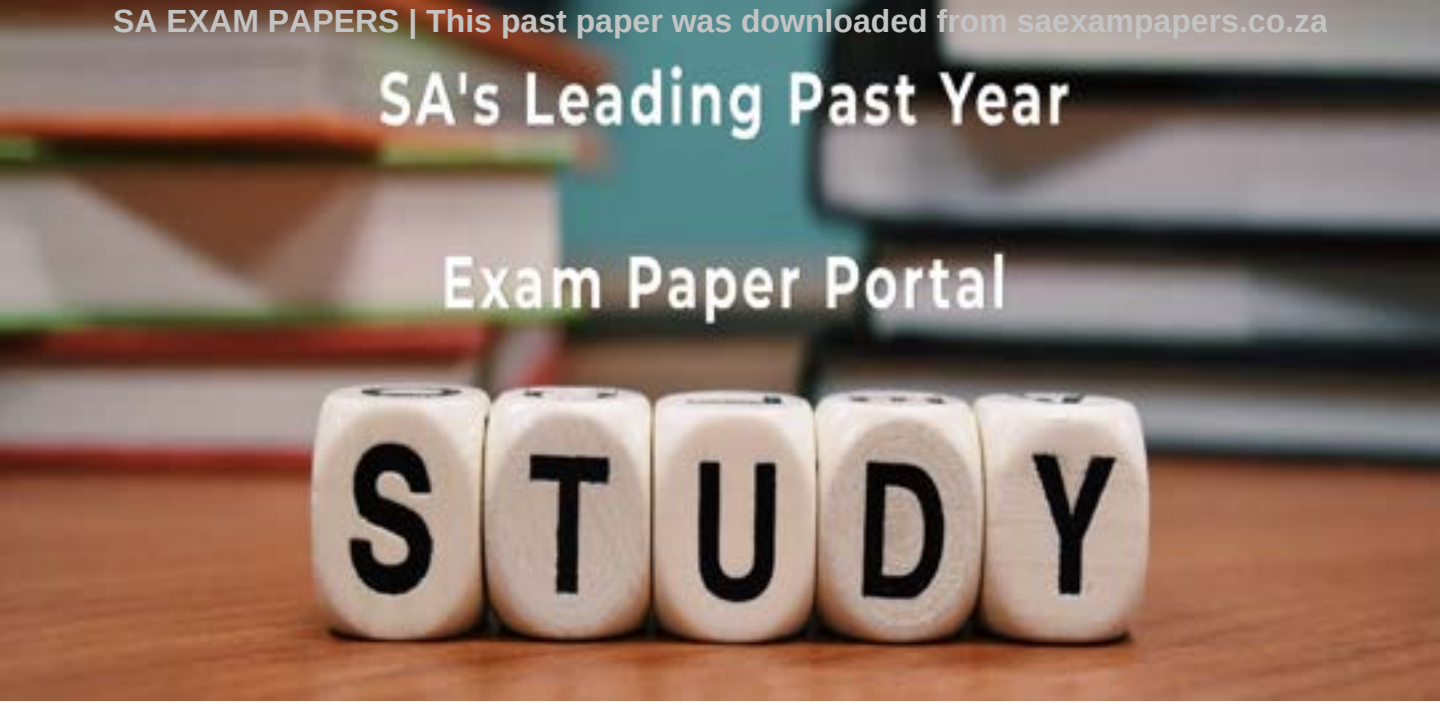

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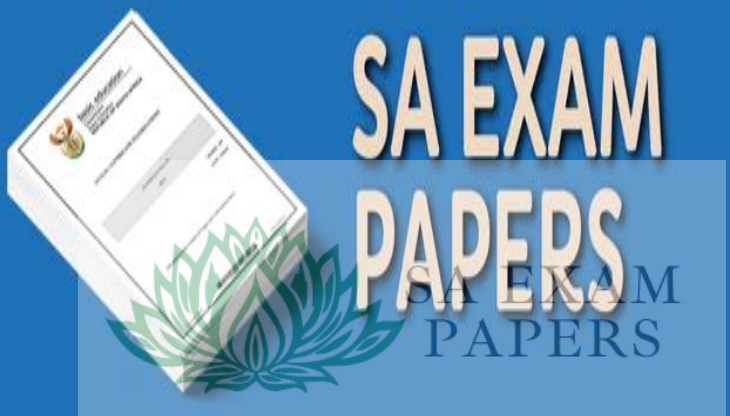


LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

LIFE SCIENCES P1

PRE-TRIAL MARKING GUIDELINES

2024

MARKS: 150
TIME: $2_{1/2}$ HOURS

This memorandum consists 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 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

SECTION A
QUESTION 1

1.1.1 D ✓✓
1.1.2 C ✓✓
1.1.3 B ✓✓
1.1.4 B ✓✓
1.1.5 C ✓✓
1.1.6 C ✓✓
1.1.7 A ✓✓
1.1.8 D ✓✓
1.1.9 B ✓✓

9x2 = [18]

1.2

1.2.1 Yolk ✓ (1)
1.2.2 Internal✓ fertilisation (1)
1.2.3 Peripheral nervous system ✓ (1)
1.2.4 Prolactin ✓ (1)
1.2.5 Geotropism✓/ Positive geotropism (1)
1.2.6 Eustachian tube ✓ (1)
1.2.7 Pancreas ✓ (1)
1.2.8 Photoreceptors✓/Rods and cones (1)

8x1 = (8)

1.3

1.3.1. None ✓✓ (2)
1.3.2. Both A and B ✓✓ (2)
1.3.3.B only ✓✓ (2)

3x2 = (6)

1.4.1 (a) Gibberellins✓ (1)

1.4.2 (a) Auxins✓ /Abscisic acid (1)
(b) Growing tips of stems/apical meristem of stems ✓
Growing tips of roots/apical meristem of roots ✓ (2)

(c) For Auxins:
- Stimulate cell elongation✓
- Stimulate the development of fruit ✓
- Control the abscission of leaves and fruit ✓
- Stimulate the development of adventitious roots in stem cuttings ✓

- Cause tropism in stems and roots ✓

(mark first Two)

OR

For Abscisic acid

- Contributes to the dormancy of seeds✓/inhibition of germination
- Promotes the abscission of leaves & fruits ✓
- Causes the closing of stomata✓

(Mark the first two only)(3)

1.4.3 Plant hormones are organic✓ compounds and act as chemical messengers✓(2)
(8)

1.5.1 Sweat gland ✓ (1)

1.5.2 (a) Diagram 2 ✓ and diagram 3✓ (2)

(b) Diagram 1 ✓ (1)

1.5.3 Diagram 3 ✓ (1)

1.5.4 Hypothalamus ✓ (1)

1.5.5 The tendency of living organism to maintain their internal environment constant within narrow limits irrespective of changes in the external environment✓. (1)

1.5.6 Cold day-hypothalamus stimulated ✓,

- vasoconstriction – blood vessels narrow ✓
- reduced blood flow towards the skin ✓
- sweat gland less active ✓
- less heat is released through radiation, conduction and convention ✓

(Mark any Two) (2)
(10)
Total Section A (50)

SECTION B
QUESTION2

2.1.1 (a) A - Jelly✓ layer/zona pellucida (1)

(b) G- Middle portion✓/neck (1)

(c) C – Cytoplasm ✓/cytosol (1)

(d) F - Nucleus ✓ (1)

2.1.2 (a) Middle portion/neck✓ (1)

(b) Tail✓ (1)

(c) Acrosome ✓ (1)

(d) Nucleus✓ (1)

2.1.3 (a) Cells of Leydig ✓ (1)

(b) Testosterone ✓ (1)

(10)

2.2.1 Closed eyes✓
Can't move ✓
No feathers/wings not well developed ✓ (2)

(Mark first TWO only)

2.2.2 (a) Egg yolk ✓ (1)
(b) Albumen✓ (1)

2.2.3 Precocial ✓ (1)

(5)

2.3.1(a) Volume of urine✓ (1)

(b) - Decide on a time✓/date/place to conduct the investigation
- Decide on the apparatus✓/materials that need to be used
- Decide how to record the data✓
- Advertise for volunteers to participate✓
- Decide on the number of participants to include✓
- Decide what factors to keep constant✓/example of factor to be kept constant

(Mark first TWO only)(2)

(c) - The same room✓/environment/ temperature
- The same apparatus✓
- The same investigator✓

(Mark first TWO only)(2)

(d) No other liquid intake by both groups✓
- The same level of activity✓
- Participants was the same age✓
- Participants was same gender✓
- Participants was same size✓

(Mark first TWO only)(2)

2.3.2 – ADH helps the body retain water by increasing water reabsorption in the kidneys✓, which leads to more concentrated urine and less water being lost✓. When alcohol is consumed, it inhibits the secretion of ADH from the pituitary gland✓. This is because alcohol interferes with the signals in the brain that would normally trigger the release of ADH✓ causing dehydration. (4)

(11)

2.4.1 (a) B ✓ (1)

(b) C ✓ (1)

2.4.2 The stirrup cannot vibrate ✓ and the vibrations will not be transmitted to the inner ear ✓. The organ of Corti will not be stimulated ✓ resulting in hearing loss. (3)

2.4.3 (a) E – tympanic membrane ✓, or B – ossicles ✓ (2)
(b) C – the cochlea ✓ (1)

2.4.4 A virus or inflammation of the inner ear disrupts the transmission of sensory information from the ear to the brain ✓. This may result in dizziness, difficulties with balance, with hearing, and lead to a ringing in the ears (tinnitus) ✓. (2)
(10)

2.5.1 (a) Oestrogen✓ (1)
(b) Progesterone ✓ (1)

2.5.2 - It increase
- The Thickness of the endometrium✓/
- the blood vessels in the endometrium✓/ the
- amount of glandular tissue in the endometrium✓. (3)

2.5.3 (a) Ovulation is the process in the menstrual cycle where a mature egg is released from the ovary✓, making it available for fertilization✓. (2)
(b) Day 14 ✓ (1)
(c) LH✓ Luteinising hormone (1)

2.5.4 High levels of hormone B✓/ Progesterone will inhabit the secretion of FSH✓
OR
No new ova✓/ matured follicle are required during pregnancy✓ (2)

2.5.5 - The Progesterone✓ level decreases✓ because the corpus luteum has degenerated✓ (3)
[14]
Total question 2: 50

Question 3

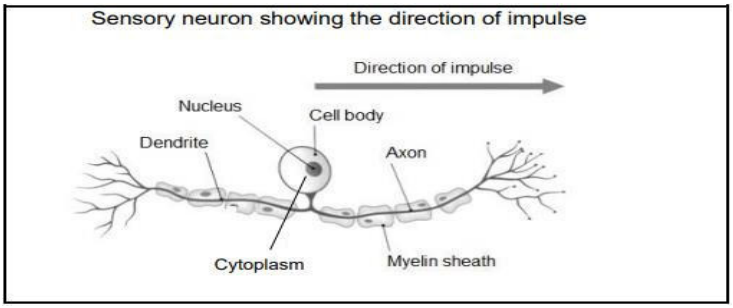
3.1.1 (45 - 40)/5 ÷ 40✓ × 100✓
= 12,5✓% (3)

3.1.2 Myelin sheath✓ (1)

3.1.3 The wider/broader the neuron the faster the reflex action would be. ✓✓
OR
The narrower/thinner the neuron the slower the reflex action would be. ✓✓ (2)

3.1.4 Synapse✓/Synaptic gap (1)

3.1.5



Rubric for assessment of the diagram

Correct type of neuron drawn **(T)**	**1**
Direction of impulse correct **(D)**	**1**
ANY 3 correct labels **(L)**	**3**
TOTAL	**5**

(5)
(12)

3.2.1 (a) Cerebrum✓ (1)

(b) Cerebellum✓ (1)

(c) Pituitary gland✓/hypophysis (1)

3.2.2 (a) Kidneys✓ (1)

(b) Kidneys✓ (1)

3.2.3 (a) D✓ glucagon✓ **OR** E✓ adrenalin✓ (2)

(b) B✓ growth hormone✓/STH/somatotropin (2)

(c) C✓ thyroxin✓ (2)

(11)

3.3.1 - The pathway along which impulses are transmitted. ✓
to bring about a reflex action. ✓ (2)

3.3.2 (a) Gullian-barre syndrome ✓ (1)
(mark first one only)

(b)Damage to the motor Neurons ✓ (1)
(mark first one only)

C The skeletal muscles have a decreased reflex response ✓ (1)
(Mark first one only)

3.3.3 -In hyporeflexia damage is between the spinal cord and the skeletal muscles✓ while
In hyperreflexia damage is between the brain and the spinal cord ✓ (2)
(mark first one only)

3.3.4 Myelin sheath (1)

3.3.5 - Axon is no longer insulated ✓
-This causes the speed of transmission of nerve impulse to decrease ✓
-Which can lead to delayed response✓ and
-therefore, loss of muscle control ✓ (3)
[11]

3.4.1.
(a) Vas deferens ✓ (1)
(b) Scrotum ✓ (1)
(c) Penis ✓ (1)
(d) Urethra ✓ (1)

3.4.2.
(a) D ✓ - epididymis ✓ (2)
(b) G ✓ - urethra ✓ (2)
(c) E ✓ - testes ✓ (2)

3.4.3. A ✓ and B ✓

3.4.4 Sperm is blocked from being released during ejaculation✓sperm cannot reach and fertilize an egg✓ (2)

3.4.5 HIV is present in semen, not just in sperm✓. The virus can be transmitted through the fluids that are still released during ejaculation✓ (2)
(16)

Total: 150