



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

LIFE SCIENCES P1

MAY/JUNE 2024

FINAL MARKING GUIDELINES

24 MAY 2024

RENETTE VAN DER WATT
INTERNAL MODERATOR
24/05/2024

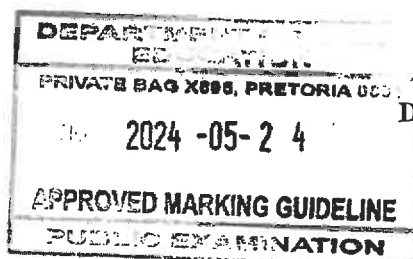
NONTOBEKO MJALI
INTERNAL MODERATOR
24/05/2024

MARKS: 150

These marking guidelines consist of 9 pages.

APPROVED

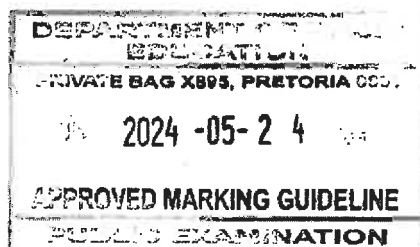
**MRS P.B. MAJOZI
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24/05/2024**



**DR P. PREETHLALL
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24/05/2024**

PRINCIPLES RELATED TO MARKING LIFE SCIENCES

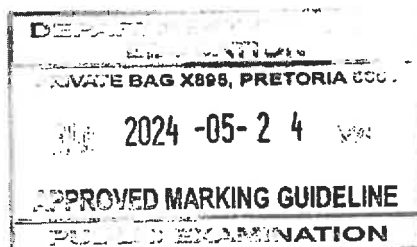
1. **If more information than marks allocated is given**
Stop marking when maximum marks is reached and put a wavy line and 'max' in the right-hand margin.
2. **If, for example, three reasons are required and five are given**
Mark the first three irrespective of whether all or some are correct/ incorrect.
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 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 memorandum**
No changes must be made to the memoranda without consulting the provincial internal moderator who in turn will consult with the national internal moderator (and the Umalusi moderators where necessary).
20. **Official memoranda**
Only memoranda 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.

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SECTION A**QUESTION 1**

- 1.1 1.1.1 B✓✓
 1.1.2 A✓✓
 1.1.3 A✓✓
 1.1.4 C✓✓
 1.1.5 B✓✓
 1.1.6 C✓✓
 1.1.7 A✓✓
 1.1.8 B✓✓
 1.1.9 B✓✓ (9 x 2) (18)
- 1.2 1.2.1 Carotid artery✓
 1.2.2 Vivipary✓
 1.2.3 Rods✓
 1.2.4 Corpus luteum✓
 1.2.5 Epididymis✓
 1.2.6 Tympanic membrane✓/tympanum
 1.2.7 Testis✓
 1.2.8 Prolactin✓ (8 x 1) (8)
- 1.3 1.3.1 B only✓✓
 1.3.2 Both A and B✓✓
 1.3.3 A only✓✓ (3 x 2) (6)
- 1.4 1.4.1 - Brain✓
 - Spinal cord✓ (2)
(Mark first TWO only)
- 1.4.2 (a) Corpus callosum✓ (1)
 (b) Cerebellum✓ (1)
- 1.4.3 (a) ~~Cerebellum~~ Medulla oblongata (*Refer to exam instruction*)
 (b) A✓ Cerebrum✓ (2)
 CTx / CT✓ / CT✓✓ (2)
 (8)

CONVERSION TABLE

CANDIDATE MARK	ADJUSTMENT
0	+0
1	+0
2	+1
3	+1
4	+1
5	+2
6	+2

- | | | | |
|-----|-------|---------------------------------|-----|
| 1.5 | 1.5.1 | (a) Hypothalamus✓ | (1) |
| | | (b) Pituitary✓ gland/hypophysis | (1) |
| | | (c) ADH✓/antidiuretic hormone | (1) |
| | | (d) Nephron✓/renal tubules | (1) |
| | 1.5.2 | Decrease✓ | (1) |
| | | | (5) |
| 1.6 | 1.6.1 | (a) Amniotic✓fluid | (1) |
| | | (b) Placenta✓ | (1) |
| | 1.6.2 | (a) Umbilical vein✓ | (1) |
| | | (b) - Chorionic villi✓/chorion | (2) |
| | | - Endometrium✓ | (2) |
| | | (Mark first TWO only) | (5) |

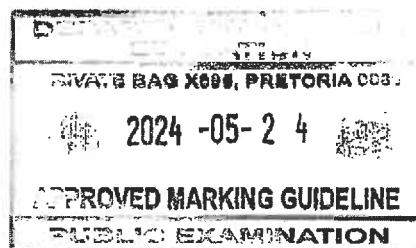
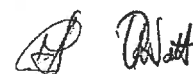
TOTAL SECTION A: 50

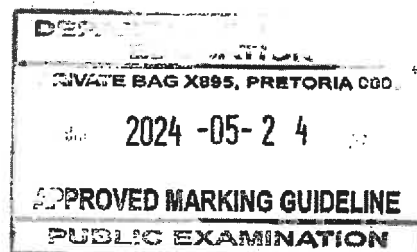


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SECTION B**QUESTION 2**

- 2.1 2.1.1 Oogenesis✓ (1)
- 2.1.2 Amniotic✓egg (1)
- 2.1.3 - It has a shell✓
to prevent drying out✓ of the embryo/amniotic fluid
- It has amniotic fluid✓
to prevent drying out✓ of the embryo Any (1 x 2) (2)
(Mark first ONE only)
- 2.1.4 - Females can reproduce without males✓
increasing the chances of the species to survive✓/therefore,
less energy is used for reproduction (2)
(Mark first ONE only) (6)
- 2.2 2.2.1 - Stimulates ovulation✓
Stimulates the development of the corpus luteum✓ (2)
(Mark first TWO only)
- 2.2.2 Follicle stimulating hormone✓/FSH (1)
(Mark first ONE only)
- 2.2.3 Progesterone✓ (1)
- 2.2.4 - The (progesterone) levels will remain low✓
- The LH levels are low✓ therefore
- ovulation will not take place✓ and
- no corpus luteum will develop✓ (4)
- 2.2.5 Hormone X /progesterone levels remain high✓ (1)
(9)
- 2.3 2.3.1 (a) Age✓ (1)
(b) Fertility✓ in men (1)
- 2.3.2 They determined the:
- sperm count✓/number of normal sperm per ml of semen
- progressive motility✓/ability of sperm to swim effectively in a
straight line
- sperm necrosis✓/immature or dead sperm per fresh semen
sample (3)
(Mark first THREE only)
- 2.3.3 - The investigation was conducted from 1999 to 2017✓/over 18
years
- 1 294 men✓ were tested (2)
(Mark first TWO only)
- 2.3.4 - So that age will be the only independent variable✓
- since high temperature can affect fertility✓/sperm count /sperm
motility/ sperm necrosis
- therefore, decreasing the validity✓ of the investigation (3)
(10)

- 2.4 2.4.1 (a) Mitochondria✓ (1)
- (b) Acrosome✓ (1)
- 2.4.2 Seminiferous tubules✓ (1)
- 2.4.3 (a) - It fuses with the nucleus of the ovum✓
to form the zygote✓
- It carries genetic material✓/DNA/chromosomes
which is transferred to the offspring✓
- Contains haploid number of chromosomes✓
which contributes to the formation of a diploid cell✓
Any (1 x 2) (2)
- (b) - It contains enzymes✓
that digest the outer membrane of the ovum✓ (2)
- 2.4.4 - Organelles in part B release energy✓
which enables movement of part C (2)
- 2.4.5 5 (mm/minute) x 45 (minutes)✓
= 225✓ mm (2)
(11)
- 2.5 2.5.1 (a) Auditory nerve✓ (1)
- (b) Cochlea✓ (1)
- 2.5.2 (a) Absorbs (excess) pressure waves✓ from the inner ear/prevents
echo (1)
- (b) Equalises pressure on either side of the tympanic membrane✓ (1)
- 2.5.3 - The person will suffer from hearing loss✓*/be deaf because
- no/less vibrations will be transmitted to the oval window✓ and
- no/less pressure waves will form in the cochlea✓/inner ear
- Therefore, there will be less/no stimulation of the organ of Corti✓/
hair cells
- Less/no impulses will reach the cerebrum✓
Compulsory mark✓* + Any 3 (4)
(8)
- 2.6 - Cristae✓
- are stimulated by a change in speed/direction of (movement) of the head✓
- Maculae✓
- are stimulated by a change in the position of the head✓
- to generate an impulse✓
- which is transmitted by the auditory nerve✓
- to the cerebellum✓ for interpretation

Any (6)
[50]

QUESTION 3

- 3.1 3.1.1 (a) Blind spot✓ (1)
- (b) Cornea✓ (1)
- (c) Sclera✓ (1)
- 3.1.2 - Radial muscles contract✓ and
- circular muscles relax✓
- The pupil widens✓/dilates
- More light enters the eye✓ (4)
- 3.1.3 Accommodation✓ (1)
- 3.1.4 - It is more convex✓
- so that light rays are refracted (bent) more✓
- to focus on the retina✓ /to form a clear image on the retina (3)
(11)
- 3.2 3.2.1 - The pathway along which impulses are transmitted✓
- to bring about a reflex action✓ (2)
- 3.2.2 (a) Guillain-Barre syndrome✓
(Mark first ONE only) (1)
- (b) Damage to the motor neurons✓
(Mark first ONE only) (1)
- (c) The skeletal muscles have a decreased reflex response✓
(Mark first ONE only) (1)
- 3.2.3 - 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)
- 3.2.4 Myelin sheath✓ (1)
- 3.2.5 - Axon is no longer insulated✓
- This causes the speed of transmission of nerve impulses to
decrease✓
- which can lead to a delayed response✓ and
- therefore, loss of muscle control✓ Any (3)
(11)

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- 3.3 3.3.1 (a) - Insulin✓
- Glucagon✓
(Mark first TWO only) (2)
- (b) Pancreas✓ (1)
- 3.3.2 08:00 and 09:00✓ (1)
- 3.3.3 - Blood glucose levels increased✓
- to above 7,1✓ mmol/L/ to 8,4 mmol/L (2)
- 3.3.4 - Blood glucose levels decreased to below 3,9✓ mmol/L at 14:00
- stimulating the Islets of Langerhans✓ /pancreas
- to secrete glucagon✓
- which stimulates the conversion of glycogen to glucose✓
- therefore, increasing blood glucose levels✓ at 15:00 Any (4)
- 3.3.5 - Levels would have remained high✓
- for a longer period✓ (2)
(12)
- 3.4 3.4.1 Adrenal✓ gland (1)
- 3.4.2 On top of the kidneys✓ (1)
- 3.4.3 - It stimulates the breathing muscles✓
- and this increase the rate/depth of breathing✓ so that
- more oxygen is inhaled✓
- It stimulates the heart✓ muscle
- causing an increase in heart rate✓/blood pressure so that
- oxygen and glucose are transported faster✓ Any (5)
(7)
- 3.5 3.5.1 (a) Geotropism✓/Gravitropism (1)
- (b) Auxins✓ (1)
- 3.5.2 - Due to gravity✓
- there is a higher concentration of auxins on the lower side✓ of the root
- which inhibits growth✓
- Therefore, growth will occur mainly on the upper side✓
- causing the root to bend/grow downwards✓ (5)
- 3.5.3 - The seedling must be rotated constantly✓
- to remove the effect of gravity✓ (2)
(9)
[50]

