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KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

LIFE SCIENCES P1

MARKING GUIDELINES

PREPARATORY EXAMINATION

SEPTEMBER 2024

MARKS: 150

This marking guideline consists of 9 pages.

SECTION A**QUESTION 1**

- 1.1 1.1.1 A /D ✓✓
1.1.2 C ✓✓
1.1.3 D ✓✓
1.1.4 A ✓✓
1.1.5 B ✓✓
1.1.6 C ✓✓
1.1.7 D ✓✓
1.1.8 D ✓✓
1.1.9 D ✓✓
1.1.10 No answer (9 x 2) (18)
- 1.2 1.2.1 Phototropism ✓
1.2.2 Placenta ✓
1.2.3 Urethra ✓
1.2.4 Vivipary ✓
1.2.5 Amniotic ✓ egg
1.2.6 Herbicides ✓
1.2.7 Maculae ✓
1.2.8 Acrosome ✓ (8)
- 1.3 1.3.1 B only ✓✓
1.3.2 A only ✓✓
1.3.3 B only ✓✓ (3 x 2) (6)

- 1.4 1.4.1 (a) P✓ - Epididymis✓ (2)
(b) M✓ - Vas deferens✓ (2)
(c) O✓ - Scrotum✓ (2)
- 1.4.2 - Produces sperm cells✓/ site of spermatogenesis
- Produces testosterone✓ (2)
(Mark first TWO only) (8)
- 1.5 1.5.1 (a) Light✓ (1)
(b) Gravity✓ (1)
- 1.5.2 (a) Root✓ (1)
(b) Stem✓ (1)
- 1.5.3 region P✓ (1)
- 1.5.4 region S✓ (1)
- 1.5.5 (a) Negative phototropism✓ (1)
(b) Negative geotropism✓ (1)
(8)

SECTION A: 48

SECTION B**QUESTION 2**

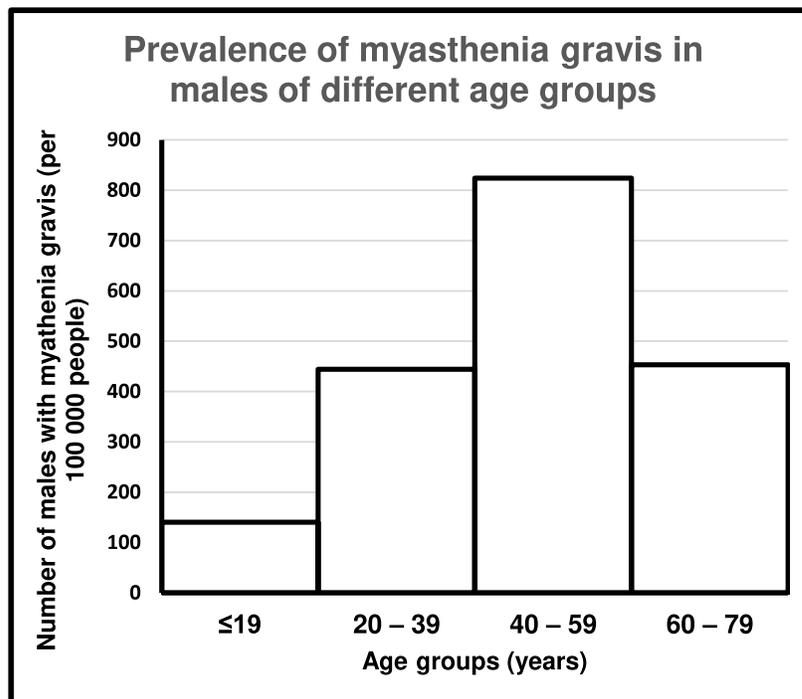
- 2.1 2.1.1 (a) Endometrium ✓/uterus (1)
- (b) Cervix ✓ (1)
- (c) Ovary ✓ (1)
- 2.1.2 (a) It is a site of fertilisation ✓ / allows for the passage of an ovum/zygote. (1)
(Mark first ONE only)
- (b) - Used for copulation ✓
- Serves as a passage for the baby during birth ✓ / It's a birth canal. Any (1)
(Mark first ONE only)
- 2.1.3 - Sperms and ova will not come into contact ✓
- Fertilisation will not happen ✓
- And a person will be infertile ✓ Any (3)
- 2.1.4 - It is kept within the uterus ✓/inside the mother's body
- Covered by the chorion ✓ } **OR** extra embryonic membranes ✓ ✓
- and an amnion ✓
- Surrounded by the amniotic fluid ✓
- Which serves as shock absorber ✓/prevents mechanical injuries
- and prevents dehydration ✓
- Attached to the mother via placenta ✓
- which produces antibodies ✓
- and filters waste ✓
- Progesterone keeps the endometrium thick ✓
- Prevents miscarriage ✓/allows for the attachment of the embryo. Any (5)
(13)

2.2	2.2.1	Testosterone ✓		(1)
	2.2.2	- They hang outside the body ✓ - to expose them at a lower temperature ✓ - than the internal body temperature ✓ - that leads to the development of healthy sperms ✓ - and maintains the sperm count ✓	Any	(4) (5)
2.3	2.3.1	Peripheral ✓ nervous system		(1)
	2.3.2	Brain ✓ and spinal cord ✓ (Mark first TWO only)		(2)
	2.3.3	No answer		
	2.3.4	Cranial ✓ and spinal ✓ nerves (Mark first TWO only)		(2)
	2.3.5	- To increase heart rate ✓ - Dilates blood vessels of the skeletal muscles ✓ - Dilates the pupil ✓ - Constrict the blood vessels of the gut and skin ✓ - To increase breathing rate ✓ - Stimulates the adrenal gland ✓ - To produce more adrenalin ✓ - Stimulates the secretion of sweat ✓	Any	(5) (10)
2.4	2.4.1	No answer		
	2.4.2	- receptors receive a stimulus ✓ - and convert it into an impulse ✓ - which travels via sensory neuron ✓ - to the spinal cord ✓ - the impulse travels through the synapse ✓ - into the interneuron ✓ - which sends it to the motor neuron ✓ - that carry impulse to the effector ✓ - to bring about a rapid response to the stimulus ✓	Any	(5) (5)
2.5	2.5.1	Above 80 ✓ years / ≥ 80 years		(1)
	2.5.2	- Muscle weakness ✓ - Difficulty speaking ✓ - Difficulty moving ✓ (hands/arms, legs/feet, any appropriate answer) - Visual problems ✓ (Mark the FIRST TWO only)	Any	(2)

2.5.3 The risk of myasthenia gravis increases as the age increase ✓
until the age of 59 ✓ after that it decreases as the age increases. ✓ (3)

2.5.4 $(1293/100\ 000) \times 12500000 = 161\ 625$ ✓ (3)

2.5.5



MARKING CRITERIA

CRITERIA	ELABORATION	Marks
Caption of graph (T)	Both variables included	1
Correct type of graph (C)	Histogram drawn	1
Axes labels (L)	X- and Y – axes correctly labelled with units	1
Scale for X- and Y – axes (S)	Equal width of bars for x-axis Correct Y-axis	1
Plotting of bars (P)	- 1 – 3 correct bars drawn correctly	1
	- All 4 required bars drawn correctly	2

(6)
(15)
[48]

QUESTION 3

- 3.1 3.1.1 (a) D ✓ and E ✓ (2)
- (b) B ✓, C ✓ and I ✓ Any (2)
(Mark first TWO only)
- 3.1.2 (a) Controls the amount of light that enters the eye ✓ (1)
- (b) - Absorbs excess light ✓
- Supplies the eye with nutrients and oxygen ✓ Any (1)
- (c) Equalises air pressure between the middle and outer ear ✓ (1)
- 3.1.3 (a) - Contains cristae ✓
- Which are stimulated by the change in direction and speed ✓
- And convert the stimulus into an impulse ✓ (3)
- (b) - Eardrum vibrates ✓
- Causing ossicles to vibrate and amplify vibrations ✓
- This causes vibration of the oval window ✓
- Setting pressure waves on the endolymph ✓
- Which stimulates the organ of Corti ✓ in the cochlea
- Organ of Corti converts the stimulus into an impulse ✓ Any (5)
[15]
- 3.2 3.2.1 Hypothalamus ✓ (1)
- 3.2.2 - rapid heart rate ✓
- confusion ✓
- dry and hot skin ✓ Any (2)
(Mark first TWO only)
- 3.2.3 - blood vessels of the skin constrict ✓ / vasoconstriction occurs
- less blood flows to the skin surface ✓
- less heat is lost ✓ through radiation
- less blood flows to the sweat glands ✓
- sweat glands become less active ✓
- less sweat is produced ✓
- less heat is lost through evaporation ✓ / more heat is retained within the body. Any (4)
- 3.2.4 - High temperature ✓
- Enzymes will denature ✓ in the cells
- The rate of metabolism will decrease ✓ (3)
(10)

3.3 3.3.1

Diabetic person	Non-diabetic person
1. More increase in glucose level✓	1. Less increase in glucose level✓
2. Takes much longer to return to initial level✓	2. Returns to normal much faster✓

1 mark for table + any 4

(5)

- 3.3.2 - During exercise carbon dioxide increases ✓
 - The receptors in the carotid arteries detect this increase ✓
 - A message is sent to the medulla oblongata ✓
 - Which send impulses to the breathing muscles ✓
 - and the heart✓
 - To increase the rate and depth of breathing ✓
 - More deoxygenated blood is sent to the lungs ✓
 - More carbon dioxide is exhaled ✓
 - Carbon dioxide in the blood returns to normal ✓

Any

(5)
(10)

3.4

3.4.1 No answer

- 3.4.2 - 50 adults participated ✓
 - The investigation was done over a period of 5 days ✓
(Mark first TWO only)

Any

(2)

- 3.4.3 - Ask for permission of the participants ✓
 - Decide on the sample size ✓
 - Decide on the time and venue ✓
 - Decide on the duration of the investigation ✓
 - Decide on a measuring tool✓
 - Decide on a recording method✓
(Mark first TWO only)

Any

(2)

3.4.4 Kidney✓

(1)

3.4.5 Participants were:

- Of different age groups✓
 - Different gender✓
 - Different health status✓/not specified whether they had hypopituitarism✓
 - Measurements were not taken throughout the day✓
 - Diet and liquid intake was not controlled✓
- (Mark first TWO only)**

Any

(2)

3.4.6 No answer

3.4.7 No answer

(7)

[42]

TOTAL SECTION B:

90

GRAND TOTAL:

138

CONVERSION TABLE

Mark obtained	Mark added
133 - 138	+12
121 - 132	+11
110 - 120	+10
97 - 109	+9
87 - 96	+8
74 - 86	+7
63 - 73	+6
52 - 62	+5
40 - 51	+4
30 - 39	+3
18 - 29	+2
6 - 17	+1
0 - 5	+0