



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

LIFE SCIENCES P2

2021

MARKS: 150

TIME: 2½ hours

This question paper consists of 14 pages.



INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. Answer ALL the questions.
2. Write ALL the answers in the ANSWER BOOK.
3. Start the answer to EACH question at the top of a NEW page.
4. Number the answers correctly according to the numbering system used in this question paper.
5. Present your answers according to the instructions of each question.
6. Do ALL drawings in pencil and label them in blue or black ink.
7. Draw diagrams, tables or flow charts only when asked to do so.
8. The diagrams in this question paper are NOT necessarily drawn to scale.
9. Do NOT use graph paper.
10. You must use a non-programmable calculator, protractor and a compass, where necessary.
11. Write neatly and legibly.



SECTION A**QUESTION 1**

1.1 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A to D) next to the question numbers (1.1.1 to 1.1.10) in the ANSWER BOOK, e.g. 1.1.11 D.

- 1.1.1 Which ONE of the following is a reproductive isolation mechanism?
- A Breeding at the same time of the year
 - B Adaptation to the same pollinators
 - C Prevention of fertilisation
 - D Sharing the same habitat
- 1.1.2 The scientists who won the Nobel Prize for the discovery of the structure of DNA were ...
- A Watson and Franklin.
 - B Wilkins and Franklin.
 - C Crick and Wilkins.
 - D Watson and Crick.
- 1.1.3 In a dihybrid cross, an animal with long ears (**E**) and red fur (**R**) was crossed with an animal with short ears (**e**) and black fur (**r**).
- Which ONE of the following could represent the genotypes of the parents?
- A EERR x eerr
 - B EeRr x EeRr
 - C eeRR x eerr
 - D Eerr x EERr
- 1.1.4 Which ONE of the following reduces genetic variation in the offspring?
- A Mutations
 - B Random mating
 - C Cloning
 - D Random fertilisation
- 1.1.5 Meiosis is best explained as a process that produces ... daughter cells.
- A two haploid
 - B two diploid
 - C four diploid
 - D four haploid



1.1.6 Colour-blindness is a disorder caused by a recessive allele on the X chromosome. Which ONE of the following is the genotype of a colour-blind person?

- A $X^D X^D$
- B $X^D Y$
- C $X^D X^d$
- D $X^d Y$

1.1.7 The study of the inheritance of mutations in mitochondrial DNA is an example of ...

- A fossil evidence.
- B genetic evidence.
- C modification by descent.
- D cultural evidence.



(7 x 2) (14)

1.2 Give the correct **biological term** for each of the following descriptions. Write only the term next to the question numbers (1.2.1 to 1.2.9) in the ANSWER BOOK.

1.2.1 The bonds that hold the two strands of a DNA molecule together

1.2.2 A genetic cross involving one gene and its alleles

1.2.3 Undifferentiated cells that may form any other cell in the human body

1.2.4 The structures in the cell that form the spindle fibres

1.2.5 The phase of meiosis when chromosomes are aligned at the equator of the cell

1.2.6 A genetic disorder where blood does not clot

1.2.7 The formation of new species

1.2.8 Evolution characterised by long periods of no change alternating with short periods of rapid change

1.2.9 The study of heredity and variation in organisms (9 x 1) (9)



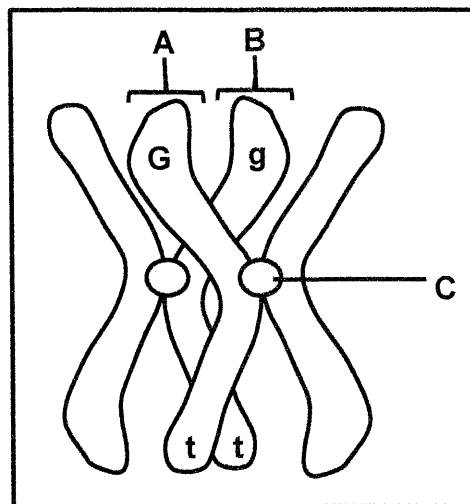
- 1.3 Indicate whether each of the descriptions in COLUMN I apply to **A ONLY**, **B ONLY**, **BOTH A AND B** or **NONE** of the items in COLUMN II. Write **A only**, **B only**, **both A and B** or **none** next to the question numbers (1.3.1 to 1.3.3) in the ANSWER BOOK.

COLUMN I		COLUMN II	
1.3.1	Found in the nucleus	A:	DNA
		B:	RNA
1.3.2	Random arrangement of chromosomes	A:	Anaphase II
		B:	Metaphase I
1.3.3	Site of meiosis in humans	A:	Testis
		B:	Somatic cells

(3 x 2)

(6)

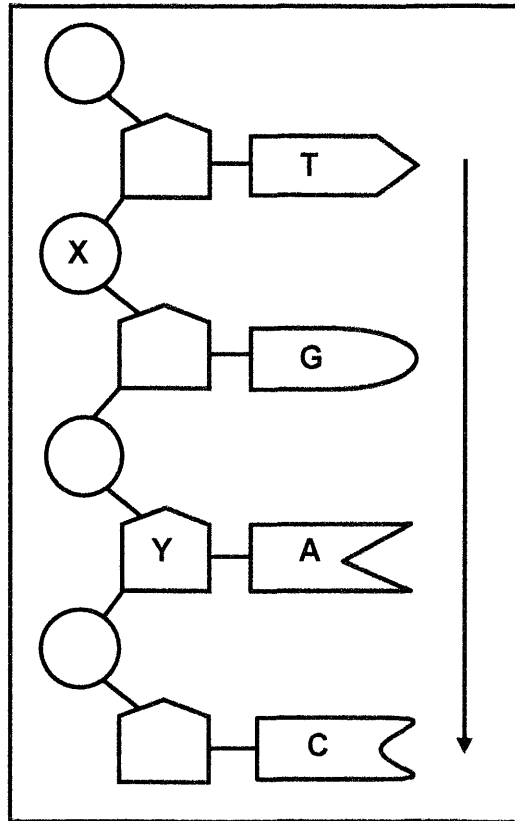
- 1.4 The diagram below represents a pair of homologous chromosomes in a plant cell. The alleles for two characteristics, seed colour (**G** and **g**) and plant height (**T** and **t**), are indicated on the chromosomes.



- 1.4.1 Give the term used to describe the position of an allele on a chromosome. (1)
- 1.4.2 Identify parts **A** and **C**. (2)
- 1.4.3 Name the process during which parts **A** and **B** exchange genetic material. (1)
- 1.4.4 During which phase of meiosis does the process named in QUESTION 1.4.3 take place? (1)
- 1.4.5 State the following for this plant:
- (a) Genotype (2)
- (b) The characteristic that is homozygous recessive (1)
- (8)



1.5 The diagram below represents some nucleotides in a single strand of DNA.



1.5.1 Give the LETTER of the part that represents a:

- (a) Sugar molecule (1)
(b) Phosphate molecule (1)

1.5.2 How many nucleotides are represented in the diagram? (1)

1.5.3 Write down the nitrogenous bases (from top to bottom as indicated by the arrow) of the complementary DNA strand of this molecule. (1)

1.5.4 Name TWO processes that require the two strands of a DNA molecule to separate into single strands as shown in the diagram. (2)
(6)



- 1.6 The table below shows the blood groups of the members of a family. Two of the children are biological offspring of the parents and one child is adopted.

FAMILY MEMBER	BLOOD GROUP
Father	A
Mother	AB
Daughter	A
Son 1	O
Son 2	B

- 1.6.1 How many:
- (a) Different phenotypes for blood group appear in this family (1)
 - (b) Possible genotypes are there for blood group AB (1)
- 1.6.2 Give the genotype of the father. (2)
- 1.6.3 Which member of the family:
- (a) Has the genotype ii (1)
 - (b) Has co-dominant alleles (1)
 - (c) Is adopted (1)

TOTAL SECTION A: 50



SECTION B

QUESTION 2

2.1 Haemoglobin is a protein found in blood that carries oxygen to all the cells of the body. A portion of this protein is called a beta chain. If the sequence of amino acids in this chain changes, then a different form of haemoglobin, called haemoglobin S, is formed. Haemoglobin S cannot transport oxygen as efficiently as normal haemoglobin.

Position of amino acids in the beta chain	1	2	3	4	5	6	7
Normal haemoglobin	Val	His	Leu	Thr	Pro	Glu	Glu
Haemoglobin S	Val	His	Leu	Thr	Pro	Val	Glu

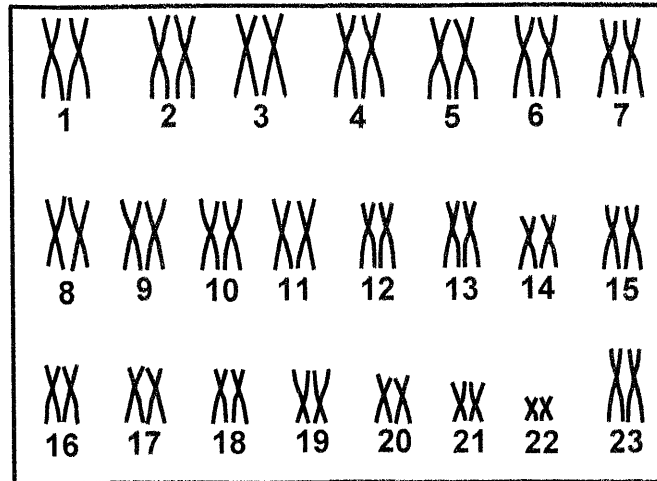
The table below shows the DNA base triplets coding for some amino acids.

DNA BASE TRIPLET	AMINO ACID
CAC	Val
GTG	His
GAC	Leu
TGA	Thr
GGA	Pro
CTC	Glu

- 2.1.1 Give the:
- (a) DNA base triplet for amino acid 3 (1)
 - (b) mRNA codon for amino acid 4 (2)
- 2.1.2 What is a change in the sequence of DNA base triplets called? (1)
- 2.1.3 Use the information in the tables to explain how a change in the sequence of the DNA base triplets results in the formation of haemoglobin S, rather than normal haemoglobin. (4)
- 2.1.4 Describe how a person with haemoglobin S would be affected. (2)
- (10)**



- 2.2 Describe the process of translation during protein synthesis. (6)
- 2.3 The karyotype below represents the chromosomes of a person.



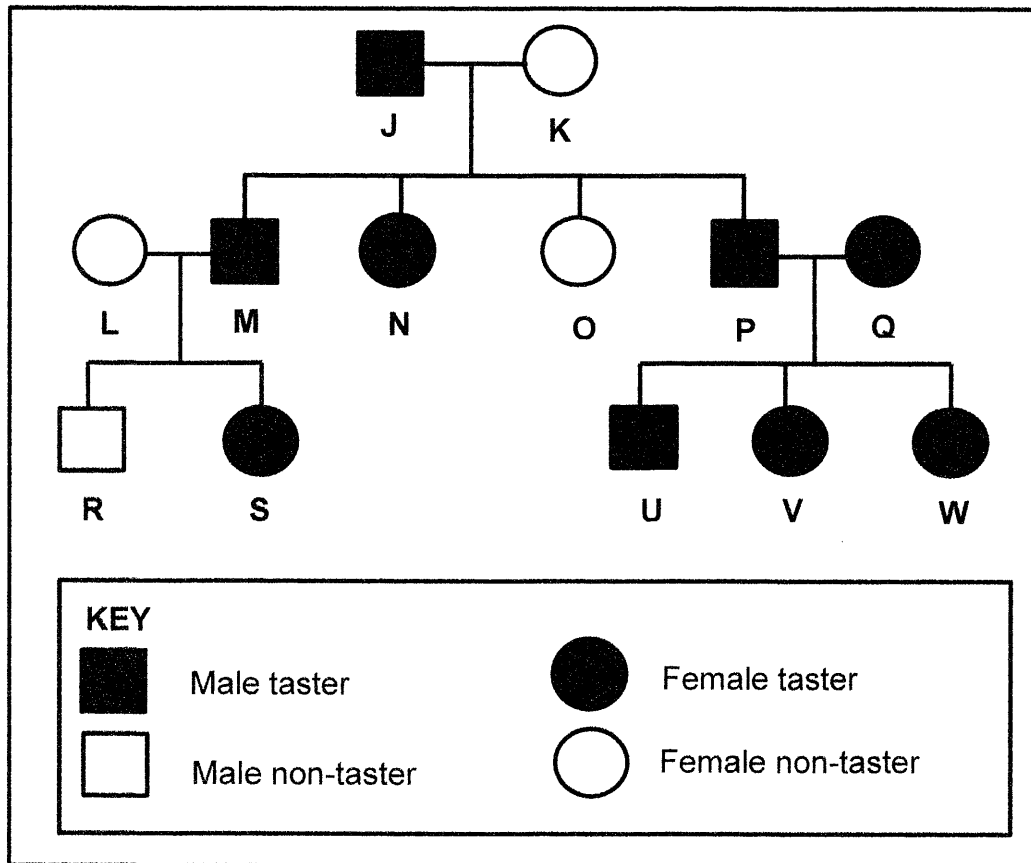
- 2.3.1 Give the collective term for the chromosomes numbered 1 to 22. (1)
- 2.3.2 State the gender of this person. (1)
- 2.3.3 Give ONE observable reason for your answer to QUESTION 2.3.2. (2)
- 2.3.4 State Mendel's principle of segregation. (2)
- 2.3.5 Describe how the karyotype of a person with Down syndrome would differ from the one above. (2)
- 2.4 In rabbits, fur colour may be black, white or grey. The inheritance of fur colour is controlled by two alleles namely:

Black fur (**B**) and White fur (**W**)

- 2.4.1 Explain why fur colour in rabbits is an example of inheritance with incomplete dominance. (2)
- 2.4.2 Use a genetic cross to show the expected genotypes and phenotypes of the offspring when a grey male mates with a black female. (6)

- 2.5 In humans, the ability to taste a certain substance is inherited and is controlled by the dominant allele **T**. People who are able to taste this substance are called tasters, while those who cannot, are called non-tasters.

The pedigree diagram below shows the inheritance of this trait in a family.



- 2.5.1 What does the term *dominant allele* mean? (2)
- 2.5.2 Give the:
- (a) LETTER of a female in the F_1 -generation who is a taster (1)
- (b) Genotype of individual J (1)
- 2.5.3 Use evidence from the diagram to support your answer to QUESTION 2.5.2(b). (4)
- (8)
- [40]

QUESTION 3

3.1 There are anatomical differences between African apes and humans. There are also characteristics that they share.

- 3.1.1 Name ONE characteristic of the hand that African apes share with humans. (1)
- 3.1.2 Tabulate THREE differences between the skulls of African apes and humans. (7)
- 3.1.3 Give TWO characteristics of the pelvis of a bipedal organism. (2)
(10)

3.2 The fat content of cow's milk may vary between 2,6% and 5%.

A farmer has found that there is a high demand for low-fat milk (milk with a fat content of 3% or less).

He determined the fat content in the milk produced by the cows on his farm.

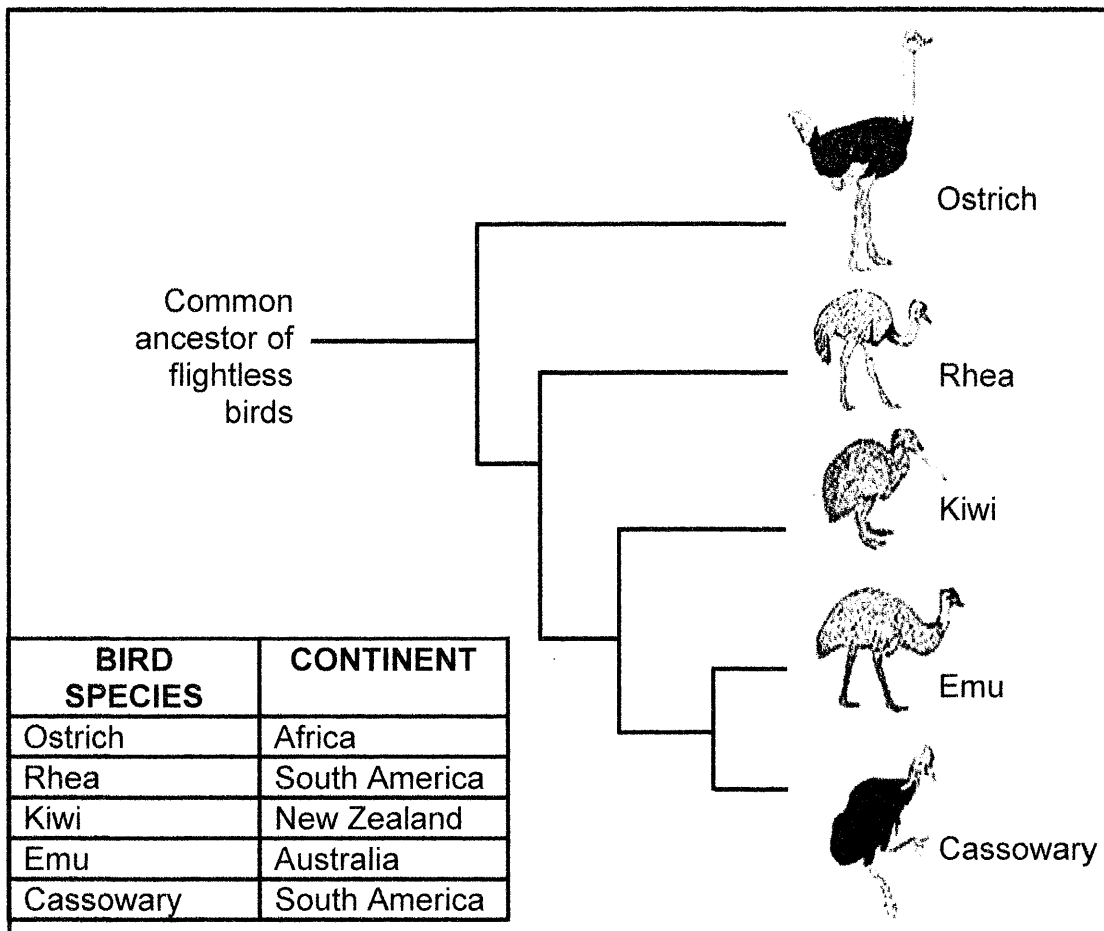
The results of his survey are given in the table below.

FAT CONTENT (%)	NUMBER OF COWS
2,6–3,0	11
3,1–3,5	66
3,6–4,0	93
4,1–4,5	61
4,6–5,0	15



- 3.2.1 Draw a histogram to represent the results of the survey. (6)
- 3.2.2 Calculate the percentage of the farmer's cows that produce low-fat milk. Show ALL your working. (3)
- 3.2.3 State the type of variation that occurs in the cows, based on the evidence in the table. (1)
- 3.2.4 Give an explanation for your answer to QUESTION 3.2.3. (1)
(11)

3.3 The diagram below represents the evolution of the flightless birds and the continents on which they exist at present.



- 3.3.1 Identify the type of diagram shown above. (1)
 - 3.3.2 Name the TWO species that share the most recent common ancestor. (2)
 - 3.3.3 Use information in the diagram to describe how biogeography supports the theory of evolution. (4)
 - 3.3.4 Describe how it can be proven that ostriches and rheas are different species. (2)
- (9)**

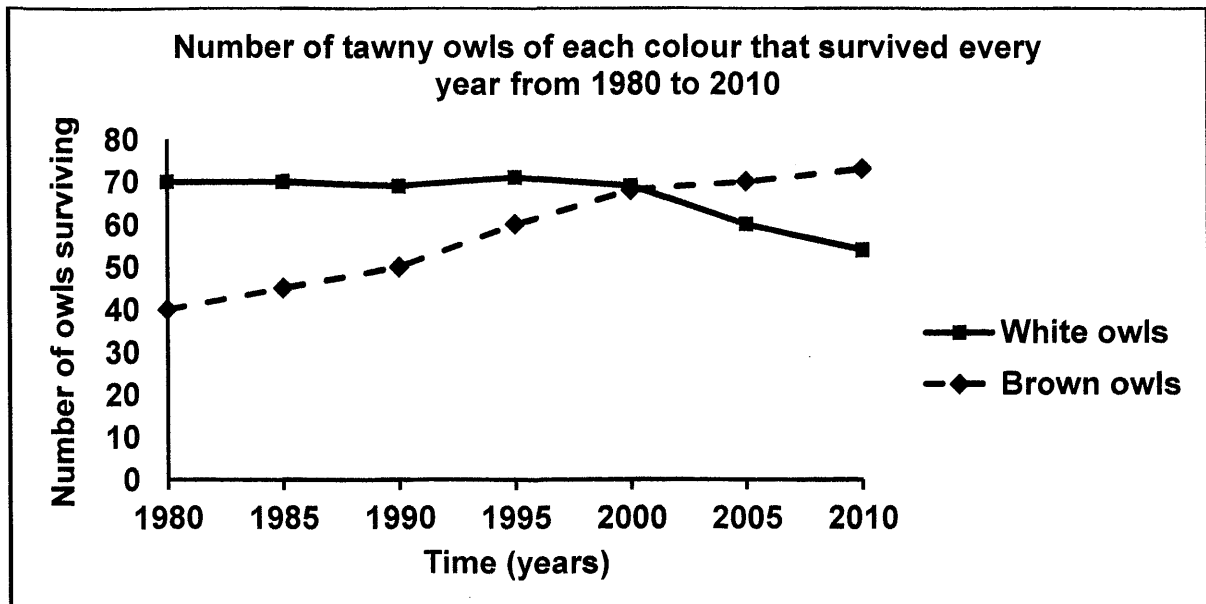
3.4 There is variation in tawny owls. Some are white and others are brown in colour.

Scientists studied these owls over a period of 30 years, from 1980 to 2010, to determine the effect of climate change on the survival of the owls. During this time, climate change caused increasing global temperatures with less snow falling each year.

The scientists:

- Conducted the investigation over the same four months of winter each year
- Observed the same population of tawny owls each year
- Determined the number of tawny owls of each colour that survived every year

The results are shown in the graph below:



- 3.4.1 Identify the dependent variable in this investigation. (1)
- 3.4.2 What conclusion can be made about the suitability of each colour owl to survive in more snow? (2)
- 3.4.3 Explain the results obtained from 2000 to 2010 for the white owls. (3)
- 3.4.4 Describe how the scientists determined the number of owls that survived each year. (3)
- 3.4.5 Name ONE variable that was kept the same. (1)
- (10)**
[40]

TOTAL SECTION B: 80



SECTION C**QUESTION 4**

Modern spider monkeys live high up in trees. They have very long tails which they use to hold on to branches. This reduces their risk of falling to the ground where they could be attacked by predators. The ancestor of spider monkeys had a much shorter tail.

Use Lamarck and Darwin's theories to explain why all spider monkeys have long tails and how artificial selection could have produced the same result.

Content: (17)
Synthesis: (3)
(20)

NOTE: NO marks will be awarded for answers in the form of a table, flow charts or diagrams.

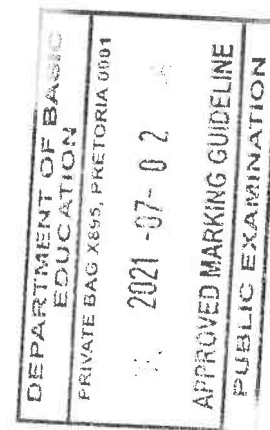
TOTAL SECTION C: 20
GRAND TOTAL: 150





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LIFE SCIENCES P2

2021

FINAL MARKING GUIDELINES – 29/06/2021

RENETTE VAN DER WATT
INTERNAL MODERATOR
27/06/2021

HAMIDA MOOSA
INTERNAL MODERATOR
27/06/2021

MARKS: 150

These marking guidelines consist of 13 pages.

APPROVED.

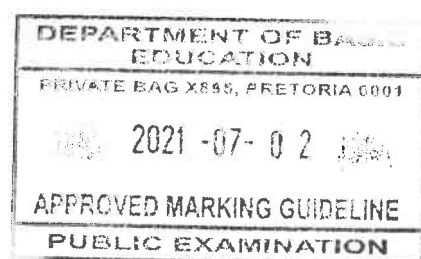
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29/06/2021**

**MRS P.B. MAJOZI
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**MR G.S. PILLAY
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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.



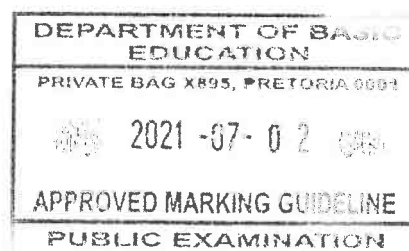


15. **If units are not given in measurements**
Candidates will lose marks. Marking guidelines will allocate marks for units separately.
16. **Be sensitive to the sense of an answer, which may be stated in a different way.**
17. **Caption**
All illustrations (diagrams, graphs, tables, etc.) must have 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.
19. **Changes to the marking guidelines**
No changes must be made to the memoranda. The provincial internal moderator must be consulted, who in turn will consult with the national internal moderator (and the Umalusi moderators where necessary).
20. **Official marking guidelines**
Only marking guidelines 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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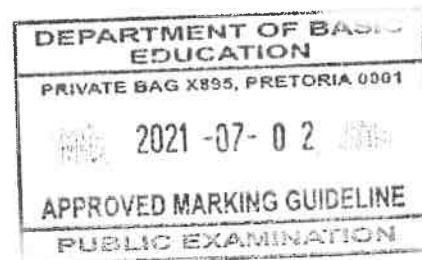
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SECTION A

QUESTION 1


1.1	1.1.1	C✓✓		
	1.1.2	C✓✓/D		
	1.1.3	A✓✓		
	1.1.4	C✓✓		
	1.1.5	D✓✓		
	1.1.6	D✓✓		
	1.1.7	B✓✓	(7 x 2)	(14)
1.2	1.2.1	Hydrogen✓ bond		
	1.2.2	Monohybrid✓ cross		
	1.2.3	Stem✓ cells		
	1.2.4	Centriole✓/Centrosome		
	1.2.5	Metaphase✓ I/II		
	1.2.6	Haemophilia✓		
	1.2.7	Speciation✓		
	1.2.8	Punctuated equilibrium✓		
	1.2.9	Genetics✓	(9 x 1)	(9)
1.3	1.3.1	Both A and B✓✓		
	1.3.2	B only✓✓		
	1.3.3	A only✓✓	(3 x 2)	(6)
1.4	1.4.1	Locus✓		(1)
	1.4.2	A - chromatid✓ C - centromere✓		(2)
	1.4.3	Crossing over✓		(1)
	1.4.4	Prophase I✓		(1)
	1.4.5	(a) Ggtt✓✓		(2)
		(b) (Plant) height✓		(1)
				(8)



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	1.5.1	(a) Y✓		(1)
		(b) X✓		(1)
	1.5.2	4✓/Four		(1)
	1.5.3	A; C; T; G✓ (must be in correct order)		(1)
	1.5.4	- (DNA) replication✓ - Transcription✓/Protein synthesis		(2)
		(Mark first TWO only)		(6)
1.6	1.6.1	(a) 4✓/Four		(1)
		(b) 1✓/One		(1)
	1.6.2	IAj✓✓		(2)
	1.6.3	(a) Son 1✓		(1)
		(b) Mother✓		(1)
		(c) Son 1✓		(1)
				(7)

TOTAL SECTION A: 50



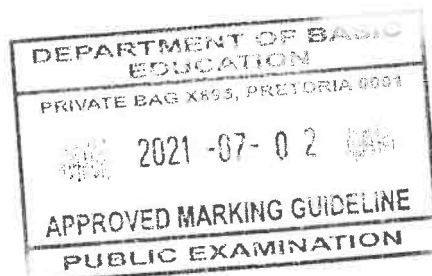
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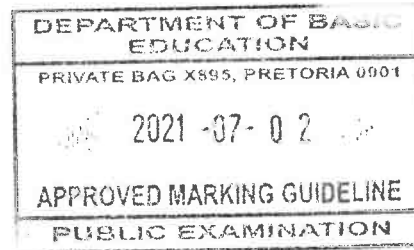


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SECTION B

QUESTION 2



- 2.1 2.1.1 (a) GAC✓ (1)
- (b) ACU✓✓ (2)
- 2.1.2 (Gene) mutation✓ (1)
- 2.1.3 - CTC on the DNA changed to CAC✓
 - Codons (on the mRNA) changed✓/GAG changed to GUG
 - Anticodons (on tRNA) changed✓/CUC replaced by CAC
 - which resulted in a different amino acid✓/ Val (4)
- 2.1.4 - The cells will not receive enough oxygen✓
 - resulting in reduced cellular respiration✓/ a person lacking energy/becoming tired/ anaemia (2)
- (10)
- 2.2 - Each tRNA carries an amino acid✓
 - When the anticodon on the tRNA✓
 - matches the codon on the mRNA✓
 - the tRNA brings the (required) amino acid to the ribosome✓
 - Amino acids become attached by peptide bonds✓
 - to form the (required) protein✓ (6)
- 2.3 2.3.1 Autosomes✓ (1)
- 2.3.2 Female✓ (1)
- 2.3.3 - The gonosomes✓/chromosome pair 23
 - are identical✓/XX (2)
- (Mark first ONE only)**
- 2.3.4 The factors/alleles that control a characteristic separate✓ (during meiosis) so that only one is present in each gamete✓ (2)
- 2.3.5 - A person with Down syndrome will have 3 chromosomes✓
 - at position number 21✓ (2)
- (8)

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- 2.4 2.4.1 - The grey fur colour is an intermediate phenotype✓/a blend of black and white
 - This indicates that neither of the alleles is dominant✓ (2)

2.4.2 P₁ Phenotype Grey x Black✓
 Genotype BW x BB✓

Meiosis

G/gametes B, W x B, B✓

Fertilisation

F₁ Genotype BB, BB, BW, BW✓*
 Phenotype Black Grey✓*

P₁ and F₁✓
 Meiosis and fertilisation✓

*2 compulsory marks + any 4

OR

P₁ Phenotype Grey x Black✓
 Genotype BW x BB✓

Meiosis

Fertilisation

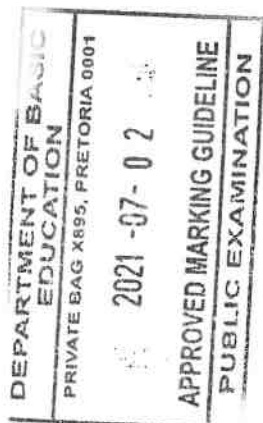
Gametes	B	W
B	BB	BW
B	BB	BW

1 mark for correct gametes
 1 mark for correct genotypes*

F₁ Phenotype Black Grey ✓*

P₁ and F₁✓
 Meiosis and fertilisation✓

*2 compulsory marks + any 4 (6)
 (8)



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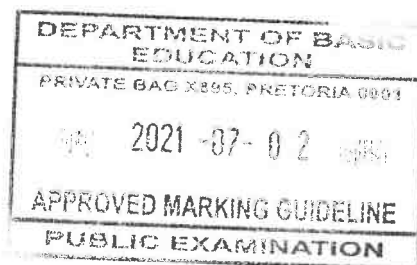
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- 2.5 2.5.1 - The dominant allele is always expressed (in the phenotype) when in the heterozygous condition✓✓
OR
- The dominant allele masks/hides the (phenotype of the) recessive allele✓✓ (2)
 - 2.5.2 (a) N✓ (1)
 - (b) Tt✓ (1)
 - 2.5.3 - J is a taster and therefore must have one dominant allele✓/T
- Individual K is tt✓
- Individual O is a non-taster✓/is homozygous recessive/tt
- She must have inherited a recessive allele/t from each parent✓
- Therefore, J must have one recessive allele✓/t
OR
- J is a taster and therefore must have one dominant allele✓/T
- If J is homozygous dominant✓/TT
- and K is homozygous recessive✓/tt
- then it is not possible to have child (O) who is homozygous recessive✓/ tt
- as she must have inherited a recessive allele/t from each parent✓ Any (4)
- (8)**
[40]

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QUESTION 3

- 3.1 3.1.1 - Bare fingertips✓/nails instead of claws
 - Opposable thumbs✓/ gripping ability
 - Fingerprints✓
 - Five fingers✓

Any (1)

(Mark first ONE only)

3.1.2

Differences between African apes and humans	
African apes	Humans
- Small cranium✓	- Large cranium✓
- Brow ridges are well developed✓	- Brow ridges are not well developed✓
- Large canines✓	- Small canines✓
- Palate is long and rectangular✓ / U-shaped	- Palate is small and semi-circular✓ / C-shaped
- Large jaws✓	- Small jaws✓
- More protruding jaws✓/ prognathous	- Less protruding jaws✓/non-prognathous
- Cranial ridges present✓	- No cranial ridge✓
- Foramen magnum in a backward position✓	- Foramen magnum in a forward position✓
- Sloping face✓	- Flat face✓
- Less developed zygomatic arch✓	- More developed zygomatic arch✓
- Less developed chin✓	- More developed chin✓
- Diastema between the teeth✓	- No diastema between the teeth✓

(Mark first THREE only)

Table 1 + (3 x 2)

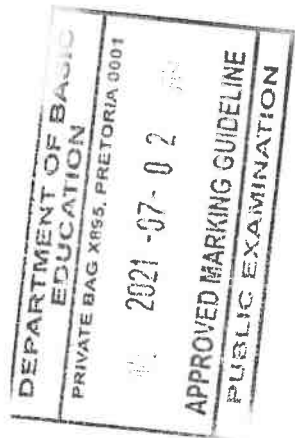
(7)

- 3.1.3 - Short✓ and
 - wide✓/broad
 - Cup-shaped✓

Any (2)

(Mark first TWO only)

(10)



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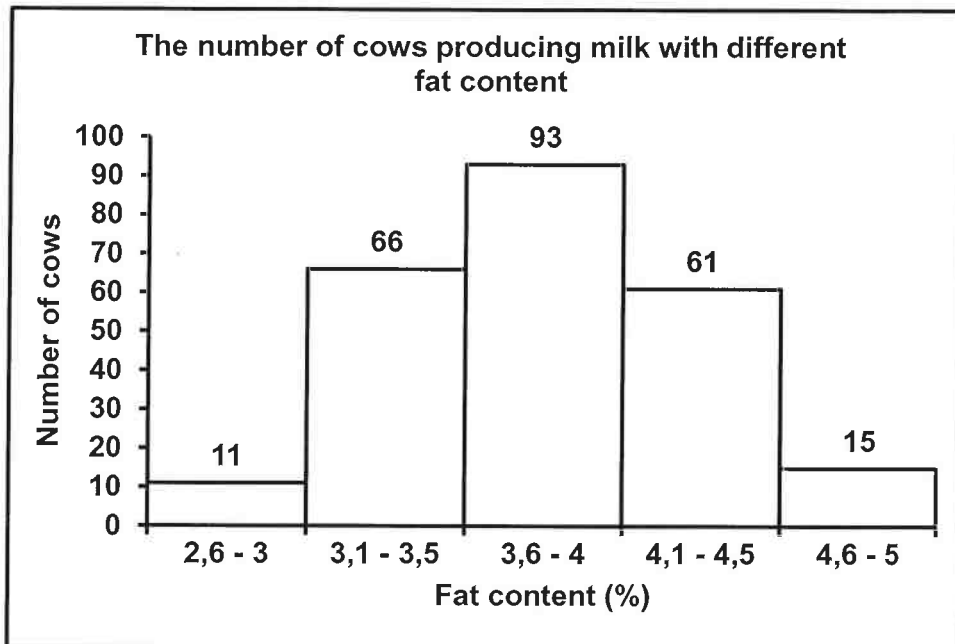
Majozi

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3.2 3.2.1



(6)

Guideline for assessing the graph

CRITERIA	ELABORATION	MARK
Correct type of graph (T)	Histogram drawn	1
Caption of graph (C)	Both variables included	1
Axes labels (L)	X- and Y-axis correctly labelled with units	1
Scale for X- and Y-axis (S)	- Same width of bars for X-axis and - Correct scale for Y-axis	1
Plotting of bars (P)	1 to 4 bars plotted correctly	1
	All 5 bars plotted correctly	2

3.2.2 $\frac{11}{246} \times 100 = 4,47\%$ (Accept 4,5) (3)

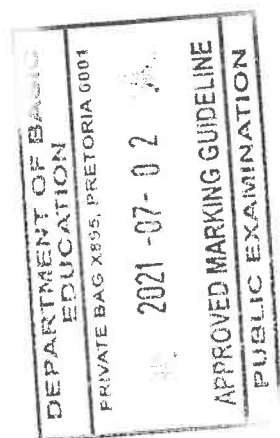
3.2.3 Continuous variation (1)

3.2.4 There is a range of intermediate phenotypes/the fat content % is a range (1)
(11)

Quill

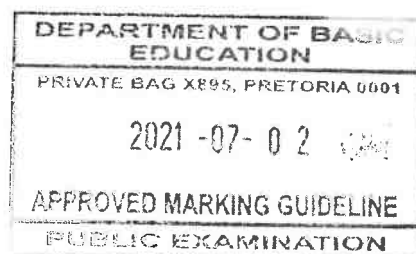
Boys

Shelley



- 3.3 3.3.1 Phylogenetic tree✓/cladogram (1)
- 3.3.2 Emu✓ and Cassowary✓ (2)
(Mark first TWO only)
- 3.3.3 - A flightless common ancestor✓
- existed on one continent✓
- Due to continental drift the original population split✓
- and each population evolved independently✓
- as they experienced different environmental conditions✓
- Each continent now has a different species of flightless bird✓
Any (4)
- 3.3.4 - Allow time for them to interbreed✓/try to interbreed
- If they produce infertile offspring✓/cannot interbreed, they are different species
- OR**
- Conduct DNA analysis✓ and
- check for differences✓ (2)
(9)
- 3.4 3.4.1 Survival of the owls✓ (1)
- 3.4.2 The brown owls are less suited to survive than the white owls✓✓
OR
The white owls are more suited to survive than the brown owls✓✓ (2)
- 3.4.3 - There is a decrease in the number of white owls✓ because
- there is less snow✓ and
- white owls will not be camouflaged✓/will be more visible to predators (3)
- 3.4.4 - They counted/sampled the number of owls at the beginning✓ of the 4-month period
- and again, at the end✓
- Then they calculated the difference✓ between the two numbers (3)
- 3.4.5 (Same):
- Time period✓/4 months
- Population✓
- Season✓/winter
- Method of calculation✓
(Mark first ONE only) Any (1)
(10)
[40]

TOTAL SECTION B: 80



SECTION C

QUESTION 4

Lamarck (J)

- He would use his law of use and disuse✓
- and law of inheritance of acquired characteristics✓
- The ancestor of spider monkeys had short tails✓
- The ancestors continually stretched✓/used their tails to be able to hold on to tree branches✓
- As a result, their tails became longer✓
- and this characteristic was passed on to the next generation✓

Any (6)

Darwin (D)

- Evolution occurs by natural selection✓
- There was variation in the ancestral population✓
- Some spider monkeys had short tails✓
- and some had long tails✓
- Those with short tails could not hold onto tree branches✓/fell on the ground
- They died✓/were attacked by predators
- The spider monkeys with long tails were able to hold on to tree branches✓/did not fall to the ground
- and survived ✓/were not attacked by predators
- and reproduced✓
- The characteristic for long tails was passed to the offspring✓

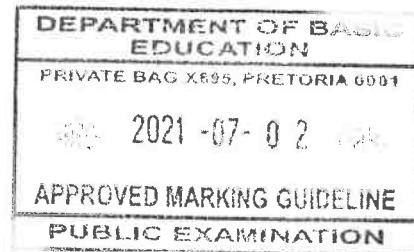
Any (8)

Artificial selection (A)

- Humans select✓ the spider monkeys with the long tails✓
- and mate them to produce offspring with long tails✓
- This is repeated over many generations✓

Any (3)

Content: (17)
Synthesis: (3)
(20)



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ASSESSING THE PRESENTATION OF THE ESSAY

Criterion	Relevance (R)	Logical sequence (L)	Comprehensive (C)
Generally	All information provided is relevant to the question	Ideas are arranged in a logical/cause-effect sequence	All aspects required by the essay have been sufficiently addressed
In this essay in Q4	Only information relevant to describing the evolution of long tails in spider monkeys in terms of: - Lamarck - Darwin - Artificial selection is included. There is no irrelevant information.	The description of the evolution of long tails in spider monkeys for each of: - Lamarck - Darwin - Artificial selection is logical and sequential.	At least the following are provided when describing the evolution of long tails in spider monkeys: - Lamarck (J: 4/6) - Darwin (D: 5/8) - Artificial selection (A: 2/3)
Mark	1	1	1

TOTAL SECTION C: 20
GRAND TOTAL: 150



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