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Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2023

LIFE SCIENCES P2 MARKING GUIDELINE

MARKS: 150

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This marking guideline consists of 11 pages.

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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.

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15. **If units are not given in measurements**
Candidates will lose marks. Marking guideline 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.

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SECTION A

QUESTION 1

1.1	1.1.1	C ✓✓		
	1.1.2	D ✓✓		
	1.1.3	B ✓✓		
	1.1.4	B ✓✓		
	1.1.5	D ✓✓		
	1.1.6	A ✓✓		
	1.1.7	C ✓✓		
	1.1.8	C ✓✓		
	1.1.9	B ✓✓	(9 x 2)	(18)
1.2	1.2.1	predator ✓		
	1.2.2	census ✓		
	1.2.3	(alcoholic) fermentation ✓		
	1.2.4	prokaryotic ✓		
	1.2.5	phylogenetic tree ✓/ cladogram		
	1.2.6	through ✓ gut		
	1.2.7	pathogen ✓		
	1.2.8	food security ✓	(8 x 1)	(8)
1.3	1.3.1	Both A and B ✓✓		
	1.3.2	A only ✓✓		
	1.3.3	Both A and B ✓✓	(3 x 2)	(6)
1.4	1.4.1	Logistic ✓/S-shaped		(1)
	1.4.2	(a) Equilibrium ✓/ stationary phase		(1)
		(b) carrying capacity ✓		(1)
	1.4.3	The population is sexually immature ✓ They are getting used to the environment ✓ They are still looking for mates ✓	(Any 2 x 1)	(2)
	1.4.4	disease ✓ competition/lack for/of food ✓ competition/lack for/of water ✓ competition/lack for/of space ✓ predation ✓ parasitism ✓	(Any 2 x 1)	(2)
	1.4.5	natality ✓ immigration ✓		(2)
1.5	1.5.1	Gymnosperms ✓ / Spermatophyte		(1)
	1.5.2	They have well developed vascular tissue ✓ They have true roots, stems and leaves ✓/ not thallus		(2)

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1.5.3 Plant **A** does not need water for fertilisation ✓/reproduction.
Gametes are transported by wind ✓
Plant **B** requires water for male gamete to swim to female gamete ✓ (3)

1.5.4 (a) rhizome ✓ (1)

(b) frond ✓ (1)

1.5.5 It has true roots, stems and leaves ✓ (1)
[50]

TOTAL SECTION A: 50

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QUESTION 2

2.1 2.1.1 Fungi ✓ (1)

2.1.2 **A** – sporangium ✓
B – sporangiophores ✓ (2)

2.1.3 hyphae ✓ (1)

2.1.4 warm ✓
moist ✓
dark ✓
(Mark first TWO only) (Any 2 x 1) (2)

2.1.5 wine ✓ / beer / alcoholic drinks
bread ✓
soy sauce ✓
cheese ✓/ yoghurt / maas
(Mark first TWO only) (Any 2 x 1) (2)

2.1.6
- Act as decomposers breaking down dead/decaying organic ✓ matter returning recycled nutrients to the soil ✓
- Mushrooms are a food source ✓ for other animals ✓
- Fungi have mutualistic relationship ✓ with algae to form lichen ✓
- Mycorrhiza fungi live on roots of plants and act as root hairs for the plants ✓
- They grow on rocks and are pioneer plants, ✓ starting the process of soil formation ✓
- They are pathogenic ✓ and cause diseases in plants and animals ✓

(Mark first ONE only) (Any 1 x 2) (2)

2.2 2.2.1 (a) (amount of) petals ✓ (1)

(b) fertilisation of ovule ✓ (1)

2.2.2 (a) anther ✓ (1)

(b) sepal ✓/ calyx (1)

(c) ovary ✓/ ovule (1)

2.2.3 Pollinators are attracted by the petals ✓ and therefore visit the flowers with petals more ✓ (2)

2.2.4 self-pollination occurred ✓
the pollen tube did not reach the ovary ✓ (2)

2.2.5 ensure all flowers have same exposure to insects ✓
use same species of flower ✓
use same colour flower ✓
(Mark first TWO only) (Any 2 x 1) (2)

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2.2.6 The greater the number of petals the greater the chance/amount of fertilisation ✓✓

OR

The number of petals increases the chance/amount of fertilisation that occurs ✓✓ (2)

2.2.7 Angiosperms
have seeds ✓
have vascular tissue ✓
have a cuticle ✓
Do not rely on water for reproduction ✓
(Mark first TWO only) (Any 2 x 1) (2)

2.2.8 Spermatophytes ✓ (1)

2.2.9. offspring genetically different ✓
zygote covered in thick protective coat ✓ (2)

2.3 2.3.1 Protozoa ✓/ Protista (1)

2.3.2
- It is non-biodegradable ✓
- It builds up in the food chain and affects animals at the top of the food chain ✓
- It caused the decline of many birds of prey as it made the shells of their eggs very thin

(Mark first ONE only) (Any 1 x 1) (1)

2.3.3
- It will have a negative impact on the economy ✓
- Because there will be less people working ✓/ earning money/ more money spent on medical care (2)

2.3.4
- The mosquito sucks up blood containing plasmodium from infected person ✓
- When it bites another person the mosquito spits some of it's saliva containing plasmodium into it's victim's blood ✓ (2)

2.3.5
- Take medication before entering the malaria area ✓
- Prevent mosquito from biting them ✓/ or an example (2)

2.3.6
- Liver ✓ cells
- Red blood ✓ cells / erythrocytes (2)

2.4 2.4.1 Porifera ✓ (1)

2.4.2 (a) **Y** ✓ (1)
(b) **X** ✓ (1)
(c) **X** ✓ (1)

2.4.3 Bilateral ✓ (1)

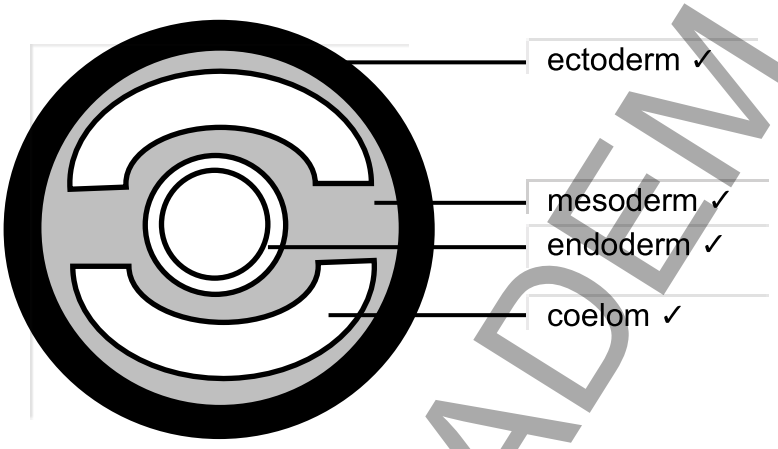
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2.4.4
- They have sense organs accumulated in the area that enters the new environment first ✓/ **show cephalization.**
- They have developed a mesoderm from which muscles originate. ✓
- They have **a coelom** that separates the body wall from the gut wall so muscles can work independently. ✓ (3)

2.4.5 Caption: **Body Plan of organism Y (fly) showing tissue layers** ✓
Correct drawing ✓
Any 2 correct labels ✓✓
(Body layers must be in correct position to be awarded mark)



(4)
[50]

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QUESTION 3

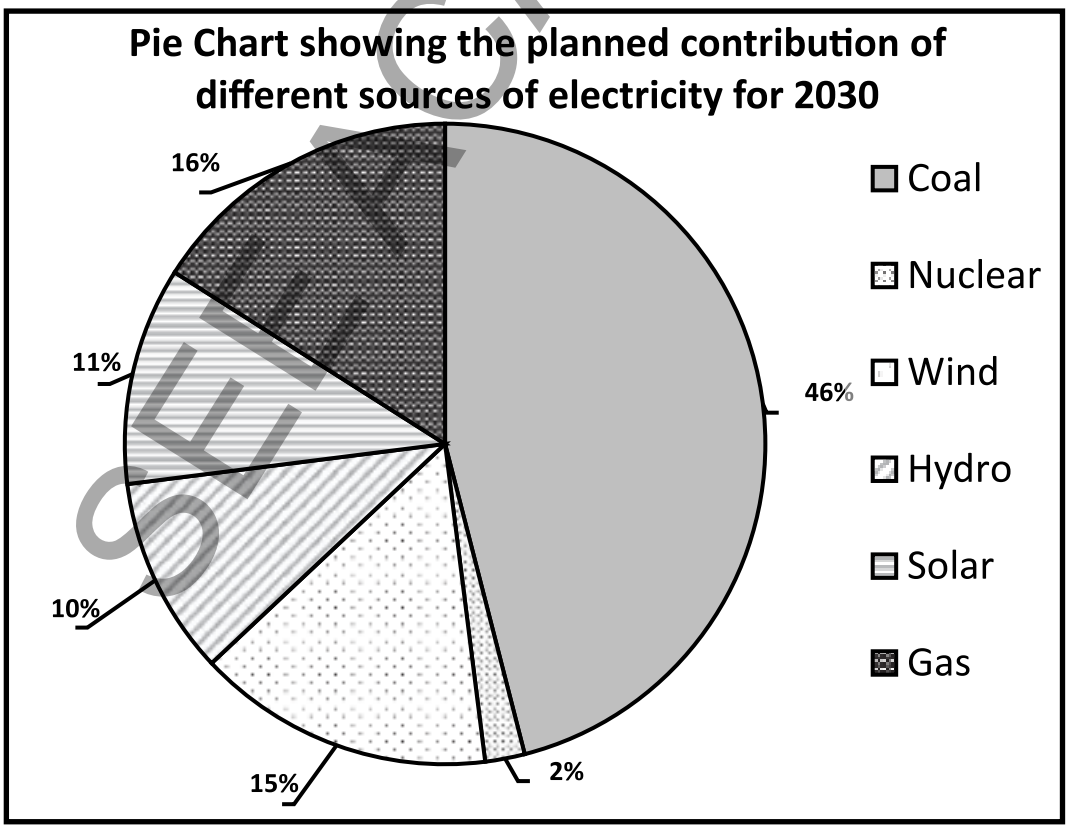
3.1 3.1.1 Coal ✓ (1)

3.1.2
- Burning coal releases carbon dioxide ✓
- Carbon dioxide is a greenhouse gas ✓
- An increase in carbon dioxide traps more heat in the atmosphere ✓
- This increases the atmospheric temperature ✓ (4)

3.1.3
- Coal is a non-renewable resource ✓/ there is a limited amount of coal / coal is expensive / it pollutes the atmosphere.
- Wind and solar power are free resources ✓ / cost of wind and solar generated electricity is lower / it does not pollute the environment. (2)

3.1.4 **Mark allocation**

Caption **(C)**	Caption has both dependant and independent variables	✓
Type of graph **(T)**	Pie chart drawn	✓
Calculations	1–5 calculations correct ✓ All 6 calculations correct ✓✓	✓✓
Portions correct size **(S)**	1–5 portion drawn to correct size ✓ All portions are drawn to correct size ✓✓	✓✓
Segments are labelled **(L)**	Labels on chart or in key	✓



(7)

3.1.5 16 – 0,8 ✓ = 15,2 ✓% (2)

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3.2 3.2.1 Simple sampling ✓/ Quadrat method (1)

3.2.2 Samples should be random ✓
They should represent the whole area ✓ (2)

3.2.3 Average number of dandelions:

(22+3+7+4+15+0+3+0+12+3+0+14+4+7+2) ✓ / 15 = 6,4 ✓

Total number of dandelions:

$$\frac{6{,}4 \times 2\,500\ m^2\ ✓}{1\ m^2\ ✓} = 16\,000\ ✓ \text{ dandelion weeds}$$ (5)

3.2.4 To increase reliability ✓ (1)

3.2.5 • To know how much weedkiller/herbicide to use ✓
• To know how long it would take him to pull out all the weeds ✓
(Mark first ONE only) (Any 1 x 1) (1)

3.3

Developed country	Developing country
Good medical care ✓	Poor medical care ✓
Low birth rate ✓	High birth rate ✓
Low death rate ✓	High death rate ✓
High economic standards ✓/ high standard of living	Low economic standards ✓/ low standard of living

Table ✓ + (Any 2 x 2) (5)

3.4 3.4.1 Water seeps through the pyrite rock ✓
And dissolves the sulphur ✓ in the rock,
Forming sulphuric acid ✓ (3)

3.4.2 • It contaminates soil so that plants do not get the required nutrients to grow ✓
• It contaminates drinking water, disrupts the growth and reproduction of aquatic organisms ✓ (2)

3.4.3 • Lime must be mined ✓ which would cost more money ✓
• Slag is a waste product ✓ and is therefore free ✓/would not cost more (4)

3.4.4 • Causes thermal pollution ✓ (1)

3.5 3.5.1 **Alien plants** do not grow naturally in an area ✓
Indigenous plants grow naturally in an area ✓ (2)

3.5.2 They use a lot of water and nutrients and grow quickly ✓/ they have no predators and pathogens (1)

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3.5.3 Chemical control ✓/ or example
Mechanical control ✓/ or example
Biocontrol ✓/ or example
(Mark first TWO only) (Any 2 x 1) (2)

3.5.4 It blocks out the sun light ✓
plants cannot photosynthesise ✓
reduces the oxygen in the water ✓
and causes organisms to die ✓* (4)
[50]

TOTAL SECTION B: 100
GRAND TOTAL: 150

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