

SACAI

SECTION C

GRADE 12

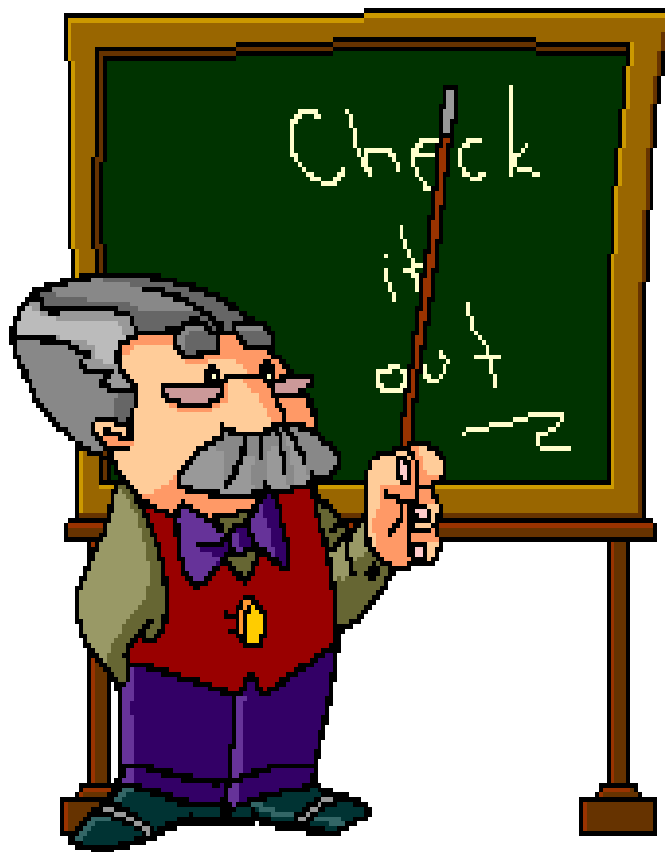
EXAMINATION GUIDELINES

LIFE SCIENCES

2016



EXAMINATION GUIDELINES (GRADE 12)



GRADE 12 EXAMINATIONS

There are **3** examinations in grade 12:

1. Midyear exam

- ONE examination paper: 150 marks; 2½ hours
- ALL work done in Term 1 and 2

2. Preliminary exam

- TWO examination papers: 150 marks; 2½ hours each
- Content and weighting is the same as final examination

3. Final examination

- TWO examination papers: 150 marks, 2½ hours each
- Content and weighting as follows

The format of the EXAM papers: (Specific Aim 1, 2 and 3)

SECTION	Type of Questions	MARKS
A	<p>ONE main question (Question 1) with sub-questions(1.1, 1.2 etc)</p> <p>Short ONE WORD answer questions:</p> <ul style="list-style-type: none"> ○ Multiple choice questions (2 marks each). ○ Terminology /Column A and B: matching columns (1 mark each) ○ Column A and B, with A or B or Both or None answers (2 marks each) ○ True or false (1 mark each) ○ A diagram with questions with one word answers 	50
B	<p>Two main questions(Questions 2 and 3)(30 marks each) with 2 to 3 sub questions(2.1, 2.2, 2.3 and 3.1, 3.2, 3.3)</p> <ul style="list-style-type: none"> ○ A variety of questions types. ○ Longer answer questions ○ Reasoning and own interpretation based on knowledge ○ Application type questions ○ Diagrams to draw, label and interpret with functions or adaptations ○ Predictions and solutions to varying problems or situations 	(2x30) = 60
C	<p>Two main questions(Question 4 and 5 Or 6)</p> <p>Data response(20 marks)(Question 4) Compulsary</p> <ul style="list-style-type: none"> ○ Case studies to analyse and solve ○ Experiments to analyse ○ Graphs to draw and/or analyse ○ Data to tabulate and/or analyse <p>Long response question (20 marks)(Question 5 OR Question 6) Choice</p> <ul style="list-style-type: none"> ○ One main question, which could be a combination of content of two knowledge areas. It could be asked to be answered as an essay (Question 5) or in a flow diagram format (Question 6). ○ It could be given as a cartoon to be interpreted and explain by means of an essay ○ It could be TWO different questions (Question 5 OR Question 6) BUT from the same content areas. 	40
GRAND TOTAL		150

CONTENT and WEIGHTING OF GRADE 12 EXAMINATIONS
(Preliminary and final examination)

Paper 1

Topic	Time spend on topic	Weighting	
		%	Marks
Term 1			
• Meiosis	1 week	7	11
• Reproduction in vertebrates	½ week	4	6
• Human Reproduction	3 weeks	21	31
Term 2			
• Responding to be environment (humans)	4 weeks	27	40
Term 3			
• Human endocrine system	1½ weeks	10	15
• Homeostasis in humans	1 week	7	11
• Responding to the Environment (plants)	1 week	7	11
Term 1			
• Human impact (Grade 11)	2½ weeks	17	25
Totals	14½weeks	100%	150

Paper 2

Topic	Time spend on topic	Weighting	
		%	Marks
Term 1			
• DNA: Code of Life	2½ weeks	19	27
• Meiosis	1 week	7	12
Term 2			
• Genetics and Inheritance	4 weeks	30	45
Term 3			
• Evolution through Natural Selection	2 weeks	15	23
• Human evolution	4 weeks	29	43
Totals	13½weeks	100%	150

The weighting per topic must serve only as a guideline to educators and examiners and is included to ensure that all topics are adequately covered in examinations. The number of marks per topic is not expected to be exactly according to this weighting in the examination papers.

Weighting of Cognitive Demands for the Assessment

Level	A	B	C	D
	Knowing Science	Understanding Science	Applying scientific knowledge	Evaluating, analysing and synthesising scientific knowledge
Description of categories	Assess recall of facts/basic knowledge	More than recall of facts and include understanding of routine and familiar material	Application of abstractions and generalizations to new, novel or unfamiliar situations	Analysis of data and pattern recognition. Synthesis of data Evaluation of data against given criteria.
% Composition	40%	25%	20%	15%
Some examples.... (not set in stone)	<input type="checkbox"/> State <input type="checkbox"/> Name <input type="checkbox"/> Label <input type="checkbox"/> List <input type="checkbox"/> Define <input type="checkbox"/> Describe and others	<input type="checkbox"/> Explain <input type="checkbox"/> Compare <input type="checkbox"/> Rearrange <input type="checkbox"/> Give an example <input type="checkbox"/> Illustrate <input type="checkbox"/> Calculate <input type="checkbox"/> Make a generalisation and others	<input type="checkbox"/> Predict <input type="checkbox"/> Apply <input type="checkbox"/> Use knowledge <input type="checkbox"/> Demonstrate <input type="checkbox"/> Solve <input type="checkbox"/> Implement <input type="checkbox"/> Judge and others	<input type="checkbox"/> Select <input type="checkbox"/> Differentiate <input type="checkbox"/> Analyse <input type="checkbox"/> Infer <input type="checkbox"/> Suggest a reason <input type="checkbox"/> Discuss <input type="checkbox"/> Categorise and others

Remember that **all examinations** must be accompanied by an **analysis grid** in which you break down the questions to indicate the cognitive level and the total marks. The composition must represent the table above.

An example of such an analysing grid is on the following paper. It is important to complete a grid for the whole paper question by question, to ensure all cognitive demands are met and content is adequately covered.

ANALYSING GRID: Paper 1 Question 3 only (AN EXAMPLE ONLY.....)

Question number	Cognitive levels and percentages expected				Topics as required by exam paper							
	A(40%)	B(25%)	C(20%)	D(15%)	Meiosis	Reproduction vertebrates	Human reproduction	Human response	Endocrine system	Homeostasis	Plant response	Human impact
3.1.1			4				4					
3.1.2		2					2					
3.1.3		2					2					
3.1.4			2				2					
3.2.1			1					1				
3.2.2			6					6				
3.2.3(a)	4							4				
3.2.3(b)	1							1				
3.3.1		8							8			
3.3.2			2						2			
3.3.3				1					1			
3.3.4			2						2			
3.4.1			1								1	
TOTAL Q3	5	12	18	5			10	12	13		5	

Marking guidelines: 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 part of it is required**
Read all and credit relevant part.
- 4. If comparisons are asked for and descriptions are given**
Accept if differences/ similarities are clear.
- 5. If tabulation is required but paragraphs are given**
Candidates will lose marks for not tabulating only, but content will be credited.
- 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 the answer. Where sequence and links is incorrect, do not credit. If sequence and links becomes correct again, resume credit.
- 9. Non-recognized abbreviations**
Accept if first defined in answer. If not defined, do not credit the unrecognised abbreviation but credit the rest of 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 recognizable accept provided it does not mean something else in Life Sciences or if it is out of context.
- 13. If common names given in terminology**
Accept provided it was accepted at the memo discussion meeting.
- 14. If only letter is asked for and only name is given (and vice versa)**
No 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, drawings, graphs, tables, etc.) must have a caption.

18. Code-switching of official languages (terms and concepts)

A single word or two that appears 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. No changes must be made to the marking memoranda without consulting the External Moderator who in turn will consult with the Examiner.

Please stick to the guideline for marking and practise it from the start, so the learners can be used to their application and make fewer mistakes in the external examinations.

Some generic challenges that learners have experienced in the NSC exam that is relevant to CAPS. Please practise these concepts with them so they will understand it clearly.

- Terminology (let the learners write short terminology tests on content they are busy with every week)
- Solving genetic cross problems. Distinguish between monohybrid and Dihybrid crosses. Teach them the formula to solve genetic crosses. (Practise over and over)
- Solving pedigree diagram problems.
- Understanding how to increase Reliability (repetition, random selection of samples, and increase sample size) and Validity (keep the method the same, same apparatus, same time span, same type of objects, solutions etc) in experimental work (explain over and over with each and every experiment or investigation you are busy with)
- Stating a hypothesis (statement of the predicted outcome) and aims (what is being investigated) – make sure they understand the differences.
- Please enforce the scientific method into them. Let them predict and make inferences.
- Essay writing. Let the learners write an essay after every main topic. Our learners have forgotten how to write longer pieces of information in a logical sequence. Let them do a planning beforehand to order their thoughts.
- Reasoning skills. If they give answers to questions asked, let them explain why. Teach them to reason.
- Evolution. Please don't skip this section of the work. Make use of this opportunity to learn what the evolutionists based their theory on. It empowers a person to reason for or against a theory if they have facts.

WORKING MARK SHEET:

The following working mark sheet is an example of the weighting and calculation of marks. **Please use the mark sheet provided from SACAI.**

WORKING MARKSHEET : LIFE SCIENCES GRADE 12																								
Educator:																								
DATE		TERM 1				TERM 2				TERM 3 & TERM 4				SBA-MARK	TRIAL EXAM			YEAR MARK	PROMOTION MARK					
		A				B				C				D	E			F	G	H				
Activity Description		TEST 1	PRACTICAL 1	TOTAL MARKS	CONVERTED MARK	TEST 2	PRACTICAL 2	JUNE EXAM	TOTAL MARKS	CONVERTED MARK	TEST 3	PRACTICAL 3	PROJECT	TOTAL MARKS	CONVERTED MARK	CONVERTED SBA: 100(A+B+C)/2	PAPER 1	PAPER 2	TOTAL	EXAM-MARK CONVERTED (300/6)	CONVERTED YEAR (D + E) MARK	CONVERTED YEARMARK (F/4)	EXAM MARK 75	PROMOTION MARK (G + H)=100
MAX.MARK		75	40	115	33.3	75	40	150	265	33.3	75	40	100	215	33.3	50	150	150	300	50	100	25	75	100
Learner's Surname and Name																								
1																								
2																								
3																								
NAME AND SIGNATURE OF Educator		NAME AND SIGNATURE OF Moderator										NAME AND SIGNATURE OF PRINCIPAL												