KZN DEPARTMENT OF EDUCATION GREENBURY SECONDARY SCHOOL

FINAL EXAMINATION - 2017 -- GRADE 11

LIFE SCIENCES PAPER 3 -- PRACTICALS

MODERATORS: K. GOV DATE: 28:09:2017	/ENDER; C. JUGDHAW	'	DURATION: 1 HR MARKS: 60
NAME:			GRADE: 11
INSTRUCTIONS TO LEA	RNERS:		
1. This paper consists o	f 6 pages		
2. Answer all questions	in the spaces provide	d on the d	question paper.
3. Write neatly.			
4. Drawings must be do	ne in pencil and label	led in ink.	
QUESTION: 1 I	IANDLING EQUIPMEN	T, OBSER	KVING, DRAWING
1.1. PLANT STUDY			
Observe the FOUR plan	t types (A, B, C, and D)) in front c	of you, and answer the questions
below.			
1.1.1. Write ONLY the L	ETTER representing th	e plant in	the appropriate space.
	bears naked seeds		
b) The plant with		· · · · · · · · · · · · · · · · · · ·	
c) A gametophyte		Manual - Para - Para	
d) A plant that be	ears fruit	· · · · · · · · · · · · · · · · · · ·	(4)
1.2. You are provided w	ith the following:		
A specimen	Forceps		
	Dissecting needl	е	
Scalpel	A slide		
Petri dish	Tape		
You are required to: i) v	riew the specimen unc	ler the mi	croscope
ii) c	lissect and remove the	e male and	d female reproductive structures
1.2.1. Handling equipn	nent: 1.	.2.2. Cla	rity of specimen:
			(2) PTO/ 1.2.3. Identify
			i i O/ IIII i uciilily

1.2.3. Identify the plant organ.	(1)	
1.2.4. Separate the male and female reproduc appropriate space below:	tive structures and paste them in the	
Male Reproductive Structure	Female Reproductive Structur	<u>e</u>
1.2.5. Draw and label a neat diagram of the M below.	ale Reproductive Structure in the spac	(2) e (4)
1.2.6. Name the pollinating agent of this flow	ver.	(1)
1.2.7. Give ONE reason for your answer.	•	(1)
[:	15]	

QUESTION 2: DESIGN / PLAN INVESTIGATIONS OR EXPERIMENTS

2.1. The apparatus for an investigation is set up in questions below.	front of you. Study it an	nd answer the
2.1.1. Write down the AIM of the investigation.	(1)	
2.1.2. Write down the steps you would follow to c apparatus in front of you.	arry out this investigatio	on, using the
2.1.3. State ONE precaution that must be observed	d when carrying out this	investigation. (1)
2.1.4. Draw and label the leaf showing the results	of the experiment.	(4)
2.2. Smoking is one of the main causes of cancer in Hospice you have been given a project to carry out number of lung cancer patients that were once smo	. You have been asked to	
Write down FIVE steps that you would follow when	planning out your inves	tigation. (5)
		PTO/ Question 3

QUESTION 3: MAKE OBSERVATIONS/ ANAL	YSE/ RECOGNIS	<u> </u>			
3.1. Observe the specimen of the organ provided and answer the questions that follow.					
3.1.1. Provide labels for the parts labelled:					
A:	_ C:				
B:	_ D:				
		(4)			
3.1.2. Name the functional unit of this struct	ture: (1)				
3.1.3. State TWO functions of this organ:	(2)				
	(7)	the Constant			
3.2. Two Grade 11 learners want to investigation of starch to glucose.	ate which enzym	ie is responsible for chemical			
They are provided with two different enzymabout 37°C and basic apparatus and chemic					
3.2.1. Formulate a HYPOTHESIS for your inve					
3.2.2. Name the following:					
Independent variable:					
Dependent variable:	·				
Controlled variable:	 	(3)			
3.2.3. Explain why the water bath was kept	at 37 ⁰ C. (1)	(-)			

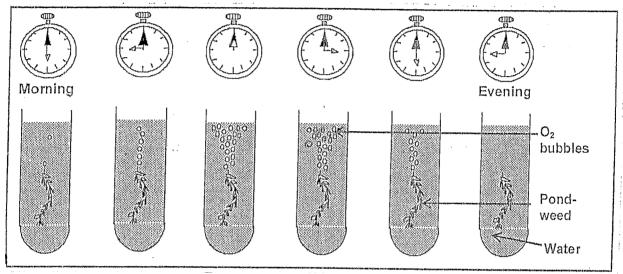
(6)

[13]

PTO / QUESTION 4

QUESTION 4 RECORDING DATA, DRAWING A GRAPH/ INTERPRETING DATA, MEASURING, CALCULATING

4.1. Study the set-up of the apparatus shown in the diagram below. The number of oxygen bubbles (O_2) released was counted at different times of the day as shown by the watch. Since photosynthesis releases oxygen, the amount of oxygen released was used as an indication of the rate of photosynthesis.



4.1.1. Draw a table to record the results of this investigation.

(

(4)

4.1.2. Use the information from the table you drew above, to draw a bar graph. (5)

(1)
4.2. POPULATION ECOLOGY
4.2.1. A group of Grade 11 learners have been selected to assist a Flour Mill Company to
determine the number of flour beetles in Bread Flour.
As practice a simulation has been set up for you. Each jar contains 250g flour. The spoon measures 10g. Carry out the investigation three times and calculate number of flour beetles present in the jar. Write down the formula and show ALL working. (6)
4.2.2. State ONE way how you can increase the reliability of your results. (1)
[17]

GREENBURY SECONDARY SCHOOL

DEPARTMENT OF MATHS & SCRENCES

H.O.D. MR L. PULAY

H.O.D. MR I. FILLAY

KZN DEPARTMENT OF EDUCATION GREENBURY SECONDARY SCHOOL FINAL EXAMINATION – 2017 -- GRADE 11 LIFE SCIENCES PAPER 3 -- PRACTICALS

	MINER: S.SINGH	ENDED, C. HICO			DURATION: 1 HR
	DERATORS: K. GOV E: 28:09:2017	ender; C. Jogd Brown	HAW IV CETTNÍ	DARY SCHOO	MARKS: 60
DAI	E. 26:09:2017	VENTANDU	PARTMENT OF	MATHS & SCIENCE	is a second
8148	ar. Mana	¥/A	H.O.D. N	RLPILLAY	
NAN	ле: <u>Мето</u>			****	GRADE: 11
			//	(3/09/201)	- mish was a second and a second
	RUCTIONS TO LEAR		U		
	nis paper consists of				
2. Ar	nswer all questions i	n the spaces pro	ovided on	the question	n paper.
	rite neatly.				
4. Dr	awings must be dor	ne in pencil and I	labelled i	n ink.	
OHE	STION: 1 HA	ANDUNG FOUR		DOERLASS.	
COL	<u> энон. 1</u> <u>п</u>	ANDLING EQUIP	<u>IVIENT, C</u>	BSERVING, E	<u>DRAWING</u>
11 [PLANT STUDY				•
7.1.	-LAMI STODY				
Ohco	mus the FOLID plant	to	1014.6	•	
belov	ive the FOOR plant	types (A, B, C, ar	nd D) in ti	ont of you, a	and answer the questions
		TTES			
7.7.1.	. Write ONLY the LE		ng the pla . ゅん	int in the app	propriate space.
	a) The plant that b			ne /	
	b) The plant with a			ern V	
	c) A gametophyte	•	-	lossy	
	d) A plant that bea	rs fruit	D F	icus 🗸	(4)
1 2 V	ou one whoulded all with	la Alaia Callando			
⊥.∠. 1	ou are provided wit	_			
	A specimen	Forceps			
	Microscope	Dissecting n	ieedle		
	Scalpel	A slide			•
	Petri dish	Tape			
ou ar	re required to: i) vie				
	ii) dis	sect and remov	e the ma	e and female	e reproductive structures
		 			, parameter 1
1.2.1.	Handling equipme	ent:	1.2.2.	Clarity of sp	pecimen:
					(2)
					PTO/ 1.2.3. Identify

(__)

1.2.3. Identify the plant organ. Flower	(1)	
1.2.4. Separate the male and female reproduct appropriate space below:	tive structures and paste them in the	
Male Reproductive Structure	Female Reproductive Structure	
Stick anther /	Stick ovary	
		(2)
1.2.5. Draw and label a neat diagram of the Mabelow.	ale Reproductive Structure in the space	(4)
drawing / Male Reproductive of Flower /	anther / filament / structure Stamen	
1.2.6. Name the pollinating agent of this flow Wind	ver.	(1)
1.2.7. Give ONE reason for your answer. Large anthers present	nt /	(1)

[15]

PTO/ Question 2

QUESTION 2: DESIGN / PLAN INVESTIGATIONS OR EXPERIMENTS

2.1. The apparatus for an investigation is set up in front of you. Study it and answer the questions below.
2.1.1. Write down the AIM of the investigation. (1) To test for starch in green leaves. To test if chlorophyll is essential for photosynthesis 2.1.2. Write down the steps you would follow to carry out this investigation, using the
2.1.2. Write down the steps you would follow to carry out this investigation, using the
apparatus in front of you. (4)
1. Boil the leaf in water. ~ 2. Boil the leaf in alcohol. Place leaf in a test-tube of
alcohol and place thetest-tube in boiling water
3. Rinse leaf in hot water
4. Add iodine to decolourised leaf.
2.1.3. State ONE precaution that must be observed when carrying out this investigation. (1)
Ensure that the burner is off when boiling the
leaf in alcohol.
2.1.4. Draw and label the leaf showing the results of the experiment. (4)
neat, correct & blue-black
The second of th
neat, correct blue-black V
alagium / /
Diagram showing result
of Starch test
2.2. Smalking is an another water assess of the state of
2.2. Smoking is one of the main causes of cancer in the lungs. As a voluntary worker at a
Hospice you have been given a project to carry out. You have been asked to investigate the number of lung cancer patients that were once smokers.
Write down FIVE steps that you would follow when planning out your investigation. (5) . Decide on sample size/Identify size of the group to be tested.
2. Prepare a questionaire
3. Decide how and when questionaires will be distributed and collected
4. Identify the groups of people to be investigated eq. clinics.
hospitals senior citizen groups houses.
5. How will data be recorded

PTO/ Question 3

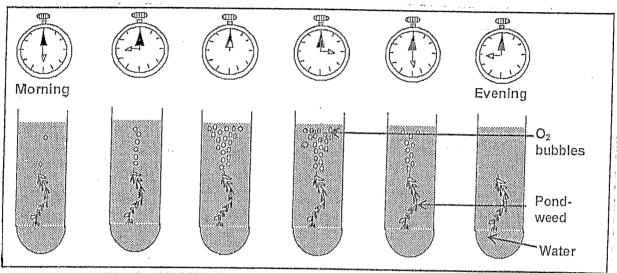
QUESTION 3: MAKE	OBSERVATIONS/	'ANALYSE/	RECOGNISE

3.1. Observe the specimen of the organ provided and answer the questions that follow.	
3.1.1. Provide labels for the parts labelled:	
A: Cortex B: Pelvis D: medull9	
B: Pelvis D: medulla	
(4)	
3.1.2. Name the functional unit of this structure: (1) Nephron	
3.1.3. State TWO functions of this organ: (2) Osmoregulation Regulation of pH Salt regulation Removal of metabolic wastes excretion.	<i>r</i> .
Removal of metabolic wastes excretion.	
(7)	
3.2. Two Grade 11 learners want to investigate which enzyme is responsible for chemical digestion of starch to glucose.	
They are provided with two different enzymes (Enzymes A and B), starch, warm water at about 37 ^o C and basic apparatus and chemicals to test for glucose.	
3.2.1. Formulate a HYPOTHESIS for your investigation. (2) Enzyme A will digest starch into glucose Enzyme B will digest starch into glucose	
3.2.2. Name the following:	
Dependent variable: Enzyme Dependent variable: Conversion of Starch into glucose digestion of a	res e
Controlled variable: Conversion of Starch into glucose (Sparch of of Starch Same amt of enzyment of controlled variable) identical beaker or test tube (3)	me/
3.2.3. Explain why the water bath was kept at 37°C. (1) Optimum To for enzyme activity / Body To	
(6)	
[13]	

PTO / QUESTION 4

QUESTION 4 RECORDING DATA, DRAWING A GRAPH/INTERPRETING DATA, MEASURING, CALCULATING

4.1. Study the set-up of the apparatus shown in the diagram below. The number of oxygen bubbles (O₂) released was counted at different times of the day as shown by the watch. Since photosynthesis releases oxygen, the amount of oxygen released was used as an indication of the rate of photosynthesis.



4.1.1. Draw a table to record the results of this investigation.

 $(\bar{})$

()

Time	06:00	09.00	12.00	15.00	18.00	21.06	All 6 Correct
No. of	2	6	20	2.0	10	0	VAII 6 Correct

(4)

4.1.2. Use the information from the table you drew above, to draw a bar graph. (5) Number of Bubbles released during 24 hours V Type / Scale on X & Y / Label for X & Y / Width & spacing / 20 20 ON Bubbles 10 5 O 06:00 09:00

Time of Day (Hrs)

5

4.1.3. What general conclusion can be made from the r				
Plate and agin in history Occasion	(1)			
Photosynthesis is highest from 12	- spm			
The rate of photosynthesis increas				
remains stable at 15.00 and decreas	ses thereafter until it stops			
4.2. POPULATION ECOLOGY				
4.2.1. A group of Grade 11 learners have been selected to assist a Flour Mill Company to				
determine the number of flour beetles in Bread Flour.				
As practice a simulation has been set up for you. Each j	ar contains 250g flour. The spoon			
measures 10g. Carry out the investigation three times a	•			
present in the jar. Write down the formula and show Al				
N= Total Mass of Flour + Beans x Sample Size	No. of beans in sample			
- Tog 1 1 1 3	OR.			
= answer A / Ans B; rans C	= Sample 5120 1 + Sample Size 2 +			
= answer A + answer B + Answer C V	sample size 3 + 3			
3 🗸	eg 5+7+4 250g			
. 🖊				
period Name Amendment of the second of the	3 109			
The state of the s	$\frac{3 \checkmark 109}{- \frac{16}{2509}}$			
	7/ 2500			
4.2.2. State ONE way how you can increase the reliability	= 16 × 2503 = 400 = 133.33 Flour beet			
4.2.2. State ONE way how you can increase the reliability Take more samples and find the	= 16 × 2509 = 400 = 133.33 Flour beet ty of your results. (1)			