basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

LIFE SCIENCES P3 (PRACTICAL)

EXEMPLAR 2012

MEMORANDUM

MARKS: 60

This memorandum consists of 4 pages.

QUESTION 1

1.1 **Use the following checklist to assess the making of the wet mount.**

CRITERIA	DESCRIPTION	MARK
Condition of slide	Is it free of dirt?	1
Thinness/Amount of specimen	Is it thin enough/spread out for light to pass through?	1
Mountant	Was the correct amount of water used – not too little or too much?	1
Cover slip	Is there a cover slip? Cover slip lowered at an angle of 45 degrees?	1 1
Presence of air bubbles under cover slip	No air bubbles under the cover slip	1
TOTAL		**6**

1.2 **Use the following checklist to determine whether the microscope is set up correctly.**

CRITERIA	DESCRIPTION	MARK
The mirror	Is the correct mirror used? Is it adjusted to allow light to pass through onto the specimen?	1 1
The condenser	Is it adjusted correctly to focus the light source onto the specimen?	1
The diaphragm	Is it adjusted to regulate the amount of light reaching the specimen?	1
Focus	Is the specimen in clear focus?	1
TOTAL		**5**

1.3 **Use the following checklist to assess the drawing from the specimen.**

CRITERIA	DESCRIPTION	MARK
Correct representation	Does the drawing look like that which is under the microscope, i.e. are the shape, size, proportion and position of all parts correct?	1
Caption	Is there a suitable caption?	1
Labels	Are all visible parts correctly labelled? Are all the labels one below the other?	1 1
Magnification/scale	Is this indicated in the caption of the drawing?	1
Rules for biological drawings	The pencil lines of the drawing are neat and continuous. There is no crossing over of label lines.	1 1
TOTAL		**7**

[18]

QUESTION 2

2.1 **Use the following checklist to assess the candidate's procedure.**

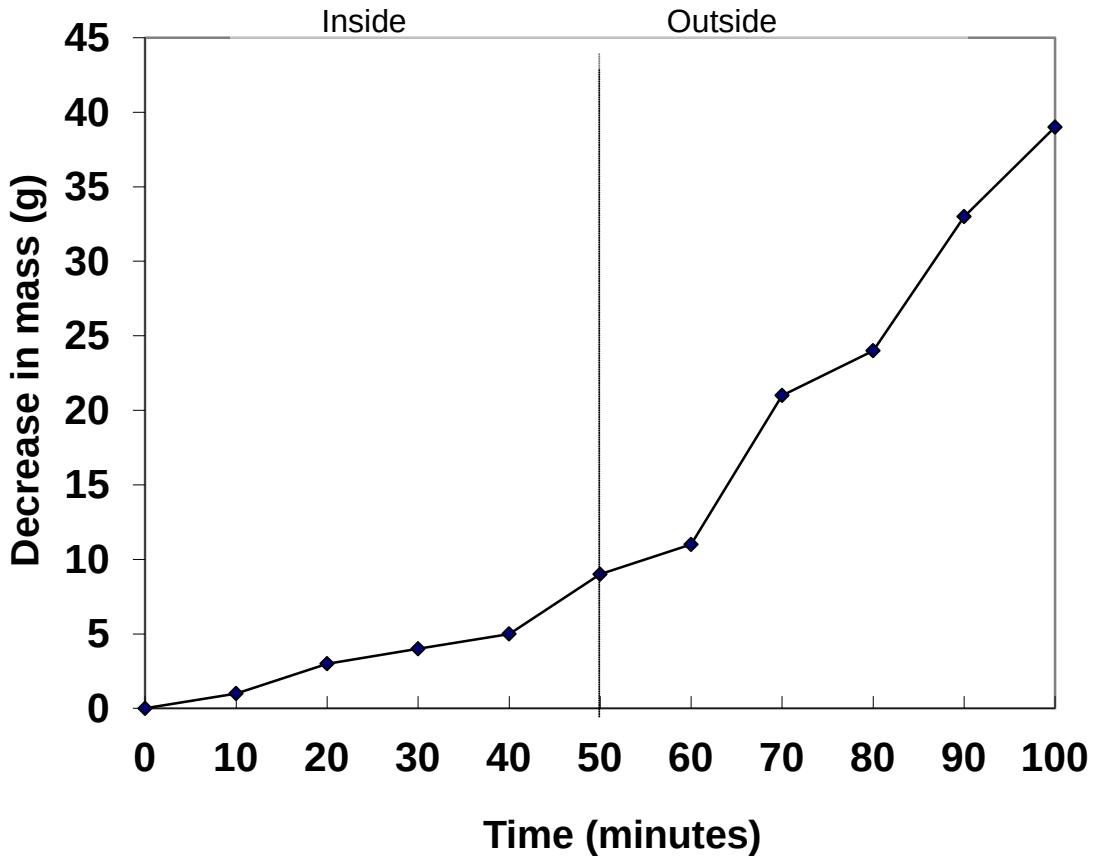
DESCRIPTION	MARK
Mixed powder with water in test tube	1
Selected iodine solution as reagent	1
Used dropper to put in a few drops of iodine solution	1
Boiled water NOT used	1
Recorded that white powder contained starch and turned black/did not contain starch and remained yellow	1
TOTAL	**5**

2.2 2.2.1 (a) B✓✓ (2)
(b) A✓✓ (2)
(c) C✓✓ (2)
(d) E✓✓ (2)

2.2.2 D✓✓ (2)
[15]

QUESTION 3

3.1 **Graph showing the decrease in mass of the apparatus inside and outside the classroom.**



Allocation of marks for drawing of graph:

Correct type of graph/ All plotted points joined	1			
Title of graph	1			
Correct label for X-axis, including correct units and appropriate scale for X-axis	1			
Correct label for Y-axis, including correct units and appropriate scale for Y-axis	1			
Plotting of points for graph	3: Plotted all 11 points correctly	2: Plotted 6–10 of the points correctly	1: Plotted 1–5 of the points correctly	0: No points plotted correctly

If the wrong type of graph is drawn, marks will be lost for correct type of graph. (7)

3.2 High light intensity✓
High temperature✓
Increased wind ✓
Low humidity ✓ (Any TWO) (2)

3.3 Repeat the investigation several times ✓ (1)

3.4 Mass of apparatus after 80 minutes: (150 – 24) ✓ = 126 g✓ (2)
[12]

QUESTION 4

4.1 A – Aorta✓
B – Ventricle✓
C – Pericardium✓
D – Tendon✓
E – Atrium✓ (5)

4.2 A – Transports oxygenated blood from the heart to arteries of the body.✓
D – Attached to the valves and muscles; prevents the valves from being forced inside out. ✓
E – Chamber that receives blood from the veins✓ (3)

4.3 The left ventricle has to be able to produce a much greater force✓
to push blood all around the body.✓
The right ventricle has to push blood only to the lungs✓
which are very close✓ to the heart. (Any THREE) (3)

4.4 4.4.1 Heart muscles are active living cells that require O_2 and food✓ and have CO_2 and metabolic wastes removed.✓ (2)

4.4.2 The atrio-ventricular valves✓/bicuspid and tricuspid valves close✓ ensuring that blood is pushed into the aorta and pulmonary arteries✓and not back to the atria. (Any TWO) (2)
[15]

TOTAL: 60