

Centre Number	Candidate Number										

Candidate Name _____

EXAMINATIONS COUNCIL OF ZAMBIA

Joint Examination for the School Certificate
and General Certificate of Education Ordinary Level

BIOLOGY

5090/3

PAPER 3 Practical Test

Wednesday

30 OCTOBER 2013

Additional materials:
As listed in Instructions to Supervisors.

TIME: 1 hour 15 minutes

INSTRUCTIONS TO CANDIDATES

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Write your name, centre number and candidate number in the spaces provided at the top of this page.

There are **two** questions in this paper.

Answer **both** questions.

Write your answers in the spaces provided on the question paper.

Use sharp **HB** pencils for your drawings. Coloured pencils and crayons should **not** be used.

INFORMATION FOR CANDIDATES

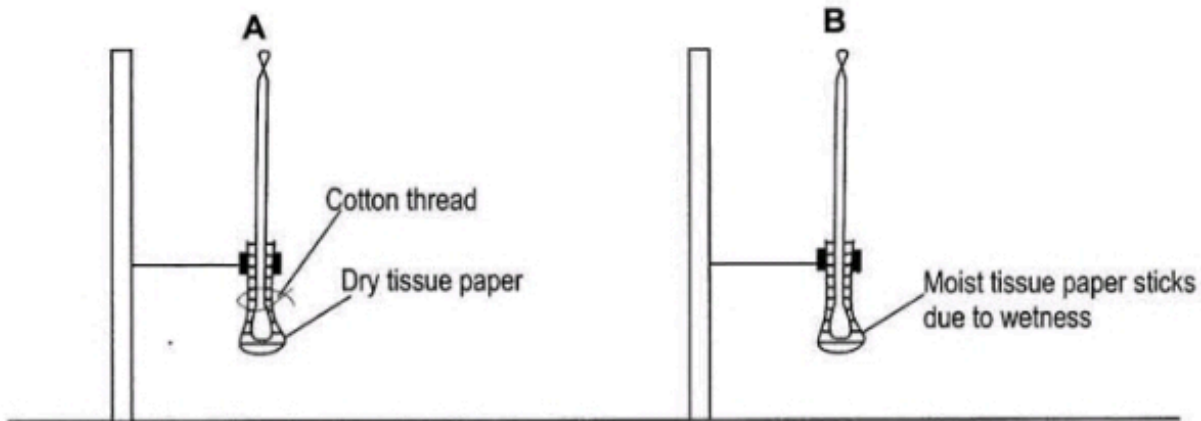
The number of marks is given in brackets [] at the end of each question or part question.

Cell phones are not allowed in the examination room.

FOR EXAMINER'S USE	
1	
2	
Total	

Answer **all** the questions.

- 1 You are provided with two thermometers **A** and **B** which have been kept at room temperature.



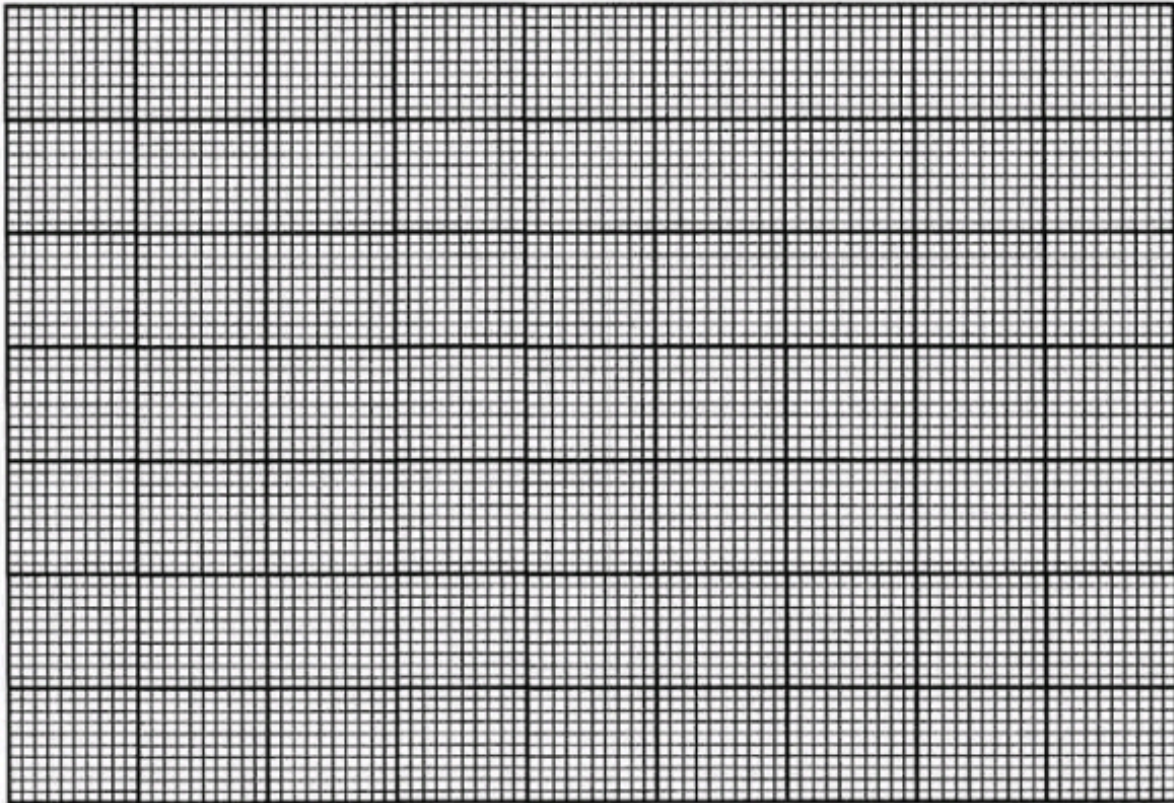
Wrap the bulb of thermometer **B** with moist tissue paper. Thermometer **A** is already wrapped for you with a similar amount of dry tissue.

- (a) Start reading the thermometer soon after wrapping the moist tissue to thermometer **B** and record temperature readings at intervals of one minute for a period of 5 minutes for each thermometer. Record the readings in table form in the space provided below.

	Thermometer A (Dry tissue)	Thermometer B (Moist tissue)
Room temperature reading		
1 st reading		
2 nd reading		
3 rd reading		
4 th reading		
5 th reading		

[5]

- (b) Draw graphs to show the relationship in temperature between the two environments of the thermometers on the same graph paper.



[4]

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- (c) Describe what happened to the temperature during the period of observation.

(i) Thermometer A.....

..... [1]

(ii) Thermometer B.....

..... [1]

- (d) State the conclusion of the experiment.

.....

.....

..... [2]

- (e) Why does a dog hang its tongue outside the mouth under certain conditions?

.....

.....

..... [2]

- (f) (i) Make a drawing of visible external features of specimen X.

[3]

- (ii) Examine one of the wings of specimen X. Measure the length of the wing.
Calculate the magnification of the wing, using the drawing made in (f) (i) above.

Measurement of length of wing

Magnification:

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[2]

[Total 20]

(d) Make a drawing of specimen C.

[3]

Measure accurately the longest side of the specimen.

Measurement:

Calculate the magnification of the drawing.

Show your working in the space provided below.

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[3]

[Total 20]

2 You are provided with Specimens **C**, **D** and **E**.

(a) What characteristic in specimens **C**, **D** and **E** shows;

(i) continuous variation?

..... [1]

(ii) discontinuous variation?

..... [1]

(b) (i) Which specimen shows co-dominance?

..... [1]

(ii) Give reasons for your answer.

.....
..... [1]

(c) Birds with feathers **D** and **E** were crossed. All the offsprings of the F1 generation were the colour of **E**.

Using suitable symbols show in form of a genetic diagram how this happened.

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[10]