ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Advanced Level

BIOLOGY 6030/4

Paper 4. Practical test 2 hours 30 minutes

SPECIMEN PAPER

INSTRUCTIONS TO SUPERVISORS

Great care should be taken that any confidential information given does not reach the candidates either directly or indirectly.

Prior to the examination, the Supervisor should ensure that all apparatus provided for the candidate, as listed in these instructions, are in good working condition.

No access to the Question Paper is allowed before the examination Date and Time.

The Supervisor is **NOT** allowed to access the question paper before the examination **Date** and **Time**.

Supervisors are advised to remind candidates that **all** substances in the examination should be treated with caution. Pipette fillers and safety goggles should be used where necessary.

These instructions consist of 4 printed pages, a Supervisor's Report form and 2 blank pages.

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1 Each candidate must be provided with the following apparatus and materials.

To be supplied by the centre

Question 1

Each candidate will require:

(i) 100 cm^3 of actively respiring yeast suspension in a beaker labelled **yeast suspension**

(ii) 25 cm^3 of 0.1% triphenyl tetrazolium chloride in a beaker labelled **TTC solution**

(iii) 400 cm^3 beaker to act as a water bath

(iv) 5 × 10 cm^3 syringes marked in /cm^3 graduations

(v) 5 × 2 cm^3 syringes

(vi) glass rod to stir

(vii) burner, tripod and gauze

(viii) a thermometer (- 10 ºC to 110 ºC)

(ix) five test tubes (15 × 2.5 cm) marked A

(x) five test tubes (15 × 2.5 cm) marked B

(xi) stop watch

(xii) test tube rack

(xiii) distilled water

(xiv) means of marking glassware

Preparation of yeast suspension

Mix 10 g of active baker's yeast with 100 cm^3 of distilled water and add 10 g of glucose
Prepare an hour before use

Question 2

To be supplied by the Centre:

Each candidate will require:

(i) 5 cm^3 of fresh tomato juice in a container labelled **S1**

(ii) 5 cm^3 of fresh grape juice in a container labelled **S2**

(iii) 5 cm^3 of fresh lemon juice in a container labelled **S3**

(iv) 10 cm^3 of 5% glucose solution in a container labelled **S4**

Preparation of the juices

To prepare **S1**, **S2** and **S3** supervisors are advised to use a food blender to produce juices from the fruits, red tomatoes, red grapes and lemons and then filter to produce an almost colourless solution.

(iv) 10 cm^3 Benedict's solution

(v) 10 test tubes on a test tube rack

(vi) Distilled water

(vii) iodine solution

(viii) 6 × 2 cm^3 syringes

(ix) 6 × 5 cm^3 syringes

Question 3

To be provided by the centre

Each candidate will require:

(i) a microscope with × 10 and × 40 objective lenses

(ii) a hand lens

(iii) Specimen labelled **Z2** – Soldier termite/juru (Shona) /igenga (Ndebele) Macrotermes

To be supplied by ZIMSEC

(iv) Slide **Z1**

I _____ Centre No. _____
(Centre Supervisor)

received _____ slides on _____ day 20 _____

and have returned _____ slides on this day _____

Signature _____

Received by: _____(ZIMSEC Official e.g. Regional Manager)

Signature _____

✂----------✂----------

I _____ Centre No. _____
(Centre Supervisor)

received _____ slides on _____ day 20 _____

and have returned _____ slides on this day _____

Signature _____

Received by: _____(ZIMSEC Official e.g. Regional Manager)

Signature _____

This form must be completed and returned with the scripts.

REPORT ON BIOLOGY PRACTICAL

1. The Supervisor is asked to give the following details using the space provided on page 6 where necessary.

(a) Any help given to a candidate.

(b) Any general difficulties encountered in preparing the apparatus.

(c) Any difficulties experienced by particular candidates. This should include reference to difficulties due to faulty apparatus or materials and accidental damage to apparatus or materials. Candidates should be identified by name and candidate number.

2. Other cases of hardship, such as disability or illness, should be reported to ZIMSEC **in the normal way**.

3. The Supervisor is asked to provide a plan of the work benches, giving details by candidate numbers of the places occupied by the candidates for each session. The plan should be enclosed with the question papers.

5. Declaration to be signed by the Supervisor

The preparation for this practical examination has been carried out so as to fully maintain the security of the examination.

Signed _____

Name (block capitals) _____

Centre number _____

Centre name _____

Date _____

Details of difficulties and any help to candidates

Signature_____ Date _____

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