

535/2 Inst. Sch.
Physics Practical
Instructions
Oct./Nov. 2024



UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Certificate of Education

PHYSICS PRACTICAL INSTRUCTIONS

535/2 Inst. Sch.

October/November 2024

CONFIDENTIAL:

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

INSTRUCTIONS FOR PREPARING APPARATUS

The candidates will be instructed not to write out a detailed description of the apparatus. The teacher responsible for preparing the apparatus **must** give details (on the report form attached) about some of the items or apparatus he/she has supplied. The form should be signed by the invigilator, the teacher responsible for preparing the apparatus and the Head teacher.

[N.B. The Head teacher **must** ensure that the teacher responsible for preparing the apparatus hands in his/her procedure and trial results, properly sealed in a separate envelope and **firmly** fastened (attached) to the candidates' scripts envelope(s).]

In addition to the apparatus ordinarily contained in a Physics laboratory, each candidate will require:

Item 1.

- 1 glass block (about $11.0\text{ cm} \times 6.0\text{ cm} \times 2.0\text{ cm}$).
- 1 white sheet of paper (size A4).
- 4 drawing pins.
- 1 complete mathematical set.
- 4 optical pins.
- 1 soft board.
- 1 plane mirror.
- 1 cell holder.
- 1 white screen.
- 1 screen with wire gauze.
- 1 torch bulb in a holder.
- 1 metre rule.
- 1 pair of fresh dry cells. (each of size D, 1.5 V).
- 1 switch/ tap key.
- 2 resistors of resistances $2\ \Omega$ and $5\ \Omega$.

Item 2.

- 1 retort stand.
- 2 clamps.
- 1 spring (Nuffield type).
- 1 metre rule.
- 1 mass hanger of 100 g.
- 5 100 g slotted masses.
- 1 piece of thread 50 cm long.
- 2 pieces of sellotape.
- 1 optical pin.
- 2 pieces of wood ($3\text{ cm} \times 2\text{ cm} \times 1\text{ cm}$).
- 1 stop clock.
- 1 knife edge.

535/2
PHYSICS
Paper 2
(Practical)
Oct./Nov. 2024
2 hours



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Uganda Certificate of Education

PHYSICS

Paper 2
(Practical)

2 hours

INSTRUCTIONS TO CANDIDATES:

*This paper consists of **two** examination items.*

*Answer only **one** item.*

*Any additional item answered will **not** be scored.*

*You are **not** allowed to start working with the apparatus for the first quarter of an hour. This time is to enable candidates; read the items thoroughly, check for the apparatus they need and plan appropriately.*

*Answers to the item **must** be written in the answer booklets provided.*

Graph paper is provided.

Mathematical tables and silent non-programmable calculators may be used.

Item 1

Your school wishes to buy glass blocks of refractive indices between 1.4 and 1.6 inclusive, to be used during Physics practical lessons. The Director of Studies (DOS) has received samples of glass blocks from a supplier who claims that they are of the required range of refractive indices.

The DOS wants to confirm the supplier's claim but lacks the knowledge, yet both the teacher of Physics and Laboratory technician are absent.

You have been provided with the sample of the glass block that was delivered to the DOS.

Task

Help the DOS to verify what the supplier says and advise the school on whether or not to buy the glass blocks.

Item 2

You have visited your friend Sarah who repairs weighing scales and expressed interest in working with her at her workshop. A weighing scale has been brought to her workshop for repair. On examining the scale, she notices that the spring in the scale is faulty and needs replacement. The spring needed for the weighing scale should be of force constant between 20 Nm^{-1} and 40 Nm^{-1} inclusive.

As part of your interview, Sarah has provided you with a spring whose force constant is unknown and wants you to determine whether or not it can be used to repair the weighing scale.

Task

Determine whether or not the spring provided to you can be used to repair the weighing scale.