

Physics III

031

14/07/2025 2:00 PM – 3:30 PM



ADVANCED LEVEL NATIONAL EXAMINATIONS, 2024-2025

SUBJECT: PHYSICS

PAPER III: ALTERNATIVE TO PRACTICAL EXAMINATION

COMBINATIONS:

PHYSICS –CHEMISTRY- MATHEMATICS **(OLD PCM)**

PHYSICS –CHEMISTRY- BIOLOGY **(OLD PCB)**

MATHEMATICS- PHYSICS-GEOGRAPHY **(OLD MPG)**

MATHEMATICS-PHYSICS- COMPUTER SCIENCE **(OLD MPC)**

DURATION: 1H 30 MIN

Instructions to candidates:

- 1) Write your names and index number only in the space provided as written on your registration form.
- 2) Do not open this question paper until you are told to do so.
- 3) This paper consists of **one** compulsory question. **(30 marks)**
- 4) All answers should be written in the space provided in this question paper
- 5) Use a **blue** or **black** pen and pencil for drawing.

COMPULSORY QUESTION: ATTEMPT ALL SUB QUESTIONS (30 marks)

In this alternative to physics practical examination, you will design a simple or compound pulley system that can be used to lift heavy loads.

Required materials

You are provided with the following materials:

- A pair of scissors or wire cutters
- Pulley wheels with grooves and central holes
- The axles (axes) /rods /wooden sticks or wire hangers
- String
- Loads /slotted masses
- Mass hangers or small metal hooks
- Retort stands or two tables
- Other support

You may use some of the materials mentioned or other materials (to be specified) if need be to complete your task.

Questions

- a) Draw a labelled diagram of a system comprising the simple or compound pulley that may help you lift heavy objects using the required materials. **(9 marks)**
- b) Describe the procedures followed to build your simple /compound pulley system and how you can test the functioning of your pulley system. **(5 marks)**
- c) Name any four forces applied on your simple/compound pulley system when it is being used. **(4 marks)**
- d) Draw a free body diagram of your simple/compound pulley system. **(2 marks)**

