



General Certificate of Education
Advanced Subsidiary Examination
June 2010

Physics

PHY3T/P10/TN

Unit 3 Investigative and Practical Skills in AS Physics

Investigative Skills Assignment (ISA) P

Instructions to Supervisors

Confidential

- These instructions are provided to enable centres to make appropriate arrangements for the Unit 3 ISA P test.
- For further details of the administration of the ISA and for information about these instructions, please see the document *Guidance Instructions for the Administration of Investigative Skills Assignment (ISA): GCE Physics*

ISA (P) Refraction

Centre instructions for the investigation

In this ISA, candidates will be expected to measure the angles of incidence and refraction for a rectangular glass or Perspex block, using a white lamp with a colour filter (or a monochromatic source). They need to plot an appropriate graph from their results.

Information for centres

Candidates should be told approximately one week before undertaking Stage 1 of the ISA that the investigation will be about refraction through a glass or Perspex block, the laws of refraction and the use of lasers in optical experiments.

Candidates will be expected to use a calculator in 'degree mode' in both Stage 1 and the written test.

Stage 2 of the ISA (the written tests: Sections A and B) should be given as soon as possible after the practical investigation.

Apparatus

Centres should ensure that the apparatus provided can be used safely. Each candidate will need:

- (a) rectangular Perspex or glass block of suitable size (e.g. 10 cm × 4 cm × 1 cm)
- (b) 12 V lamp (or other compact light source) preferably in a 'ray box'
- (c) suitable power supply for lamp
- (d) colour filter (red or green)
- (e) narrow slit to provide narrow beam of light
- (f) A4 size white paper (2 sheets per candidate)
- (g) drawing board or similar surface
- (h) protractor 1° precision minimum
- (i) sharp pencils and a 30 cm ruler
- (j) partial black-out of laboratory is helpful

Centres who have concerns about special arrangements for colour-blind or partially-sighted students should contact the AQA Centre and Candidate Support division.