

Principal Assessor Report 2006

Assessment Panel:

Physics

Qualification area

**Subject(s) and Level(s)
Included in this report**

Physics Standard Grade

Comments on candidate performance

General comments

This year's examination seems generally recognised as being fair, reasonable and accessible to candidates. The entire syllabus was well tested by the range and balance of questions asked.

Candidates' performance was roughly the same in both the Knowledge and Understanding and the Problem Solving elements.

This may indicate that most candidates prepared well for the examination, as poorly prepared candidates usually pick up *more* marks in the data handling questions in the Problem Solving element.

There was no evidence indicating poorer performance in any *one* unit of the course. Again, this indicates good preparation by the majority of candidates.

This year was the first time that candidates had access to the Physics Data Booklet during the examination. An overall impression was that this booklet was successfully used by the majority of candidates to help them select and confirm the appropriate formulae and relationships.

A small number of candidates selected the wrong formula for some questions, e.g. $A = N/t$ to find acceleration, or $p = mv$ to find power.

This could indicate that these candidates had not prepared well enough for the examination, and were simply guessing from the list.

Almost all candidates seemed to have sufficient time to complete the papers at both General and Credit levels.

Areas in which candidates performed well

Candidates performed well in data handling questions where information was extracted from graphs, tables or by interpreting diagrams. Examples include:

General:

- Q11(a) blurred image
- Q11(b)(i) light transmission
- Q12(a), (b) output/input devices
- Q13(a)(i) amplifier gain

Credit:

- Q5(a) half-life
- Q6(a)(i) visible laser light
- Q9(a)(i) thinking distance
- Q9(b)(i) reaction time
- Q11(a)(i) wind speed
- Q13(b)(iii) identifying elements

The selection and successful use of relationships was evident in several questions at both General and Credit level. Examples include:

General:

- Q8(b) distance
- Q15(a),(b),(c) weight, potential energy, power
- Q18(b) transformer turns

Credit:

- Q3(a)(i) calculate resistance
- Q6(c) energy
- Q9(a)(ii) reaction time
- Q10(a)(i) distance
- Q10(c)(i) potential energy
- Q11(a)(ii) power
- Q12(b)(i) temperature increase

Successful calculation of combined resistance of resistors in parallel (Q4(b)(ii)) showed improvement from past years.

Areas which candidates found demanding

Questions requiring a description or explanation of procedures were poorly attempted by several candidates. Explanations were often not full enough (or clear enough) to gain full marks.

Candidates should be able to explain ideas and give descriptions of models, methods and applications.

Candidates would commonly only offer one point in an answer worth two marks.

Examples include:

General:

- Q9(b) cord grip
- Q18(c) transformer operation
- Q19(b)(ii) astronaut motion

Credit:

- Q3(b)(i) obtain different readings of V & I
- Q3(b)(ii) incorrect result in table
- Q4(a)(ii) operation of circuit breaker
- Q5(b) measure half life using apparatus shown
- Q7(c)(ii) lie detector
- Q12(b)(ii) air temperature difference

Missing or incorrect units: There were a significant number of candidates who either omitted or used the wrong unit in the final answer to a question. For example:

General:

- Q15(a) unit for weight often given as kg

Credit:

- Q1(a) speed of signals
- Q2(a)(i) speed of radio signal
- Q3(a)(ii) ammeter reading

Conversion of units again caused problems for several candidates. In some questions, candidates failed to convert quantities into correct units before use in relationships – or converted incorrectly, for example:

General :

Q14(b) conversion of minutes into seconds

Credit:

Q2(a)(ii) failure to convert into metres

Q2(a)(iii) failure to convert into hertz –MHz often confused with kHz

Q11(a)(iii) hours into seconds

Advice to centres for preparation of future candidates

As in previous years, candidates should be encouraged to take care with answers to ensure that they have fully answered the question. For example, with questions requiring descriptions or explanations of procedures or methods, the answer should be commensurate with the marks awarded, with relevant points discussed.

With final answers, the correct unit should be included.

Take care with the correct selection of the relationship from the Data Booklet.

Statistical information: update on Courses

Number of resulted entries in 2005	16,917
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Number of resulted entries in 2006	17,064
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Statistical Information: Performance of candidates

Distribution of overall awards

Grade 1	32.6%
Grade 2	27.9%
Grade 3	23.7%
Grade 4	7.4%
Grade 5	4.3%
Grade 6	2.8%
Grade 7	0.4%
No award	1.0%

Grade boundaries for each assessable element in the subject included in the report

Assessable Element	Credit Max Mark	Grade Boundaries		General Max Mark	Grade Boundaries		Foundation Max Mark	Grade Boundaries	
		1	2		3	4		5	6
KU	50	36	26	40	24	18	40	15	n/a
PS	50	37	26	40	24	21	40	18	n/a