Technological Studies
Intermediate 2

External Assessment Report 2008

The statistics used in this report are pre-appeal.

This report provides information on the performance of candidates which it is hoped will be useful to teachers/lecturers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published question papers and marking instructions for the Examination.

Comments on candidate performance

General comments

The 2008 examination was found to be fair, balanced and accessible. The full range of marks was awarded in each question.

The grade boundaries remained unchanged to reflect the fact that the exam was of a similar standard to those set in previous years. This resulted in a very slight increase in the number of candidates achieving an Upper A and a 1% reduction in the overall pass rate.

Areas in which candidates performed well

Q1 energy
Q2 (b) closed loop control
Q3 (b) converting binary to decimal
Q4 (d) pneumatic safety precautions
Q9 (a) description of the operation of a pneumatic circuit
Q9 (d) producing a logic diagram
Q11 (c) energy and power calculations

Areas which candidates found demanding

Q3 (c) & (d) use of a reed switch
Q4 (b) the reason why exhaust rather than main air should be restricted
Q5 (a) (i) calculating the equivalent resistance of a parallel circuit with 3 branches
Q6 (d) reversing the sensing function of a voltage divider circuit
Q10 (a) PBASIC commands and in particular the use of decisions
Q10 (b) developing a flowchart with correct symbols
Q10 (c) function of microcontroller sub-systems
Q10 (e) (ii) function of the diode in the circuit

Advice to centres for preparation of future candidates

Centres may wish to address the following specific aspects where poor performance was noted:

- Responses from the candidates indicated a lack of knowledge in the use of a reed switch.
- A significant number of candidates appeared to be unaware of why exhaust rather than main air should be restricted when controlling the speed of a piston.
- Many candidates attempted to use the formula for 2 resistors in parallel and apply this to a circuit containing 3 parallel branches.
- It is apparent than many candidates do not refer to the Data Booklet when developing a flowchart or when completing a PBASIC program. Many flowcharts contained incorrect symbols and basic errors were repeatedly seen in the PBASIC programs. The use of *if…then* decisions present particular difficulties for candidates and again simple programming errors were common e.g. *if pin 3 = 0 then goto main.*

- Candidates tend to list characteristics when answering questions that ask for the function of a component/sub-system to be stated.

Statistical information: update on Courses

Number of resulted entries in 2007	207

Number of resulted entries in 2008	155

Statistical Information: Performance of candidates

Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum %	Number of candidates	Lowest mark
Maximum Mark - 100	-	-	-	-
A	27.7%	27.7%	43	72
B	20.6%	48.4%	32	61
C	15.5%	63.9%	24	51
D	9.0%	72.9%	14	46
No award	27.1%	100.0%	42	-

General commentary on grade boundaries

- While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.
- Each year SQA therefore holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.
- The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- Where standards are comparable to previous years, similar grade boundaries are maintained.
- An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in say Higher Chemistry this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related as they do not contain identical questions.
- SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as arrangements evolve and change.