

Principal Assessor Report 2005

Assessment Panel:

Technical Education

Qualification area

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

Revised SG Technological Studies

Statistical information: update

Number of resulted entries in 2004	2,152
Number of resulted entries in 2005	1,921

General comments re resulted entry numbers

It is disappointing to note the reduction of 232 candidates which is in part due to 14 fewer centres presenting this subject at SG.

Statistical Information: Performance of candidates

Distribution of overall awards

1	29.8%
2	24.3%
3	18.8%
4	13.9%
5	5.9%
6	4.6%
7	0.9%
No Award	1.7%

Comments on any significant changes in distribution of overall awards

The percentage of candidates achieving a grade 1 award has increased. This improvement reflects an increase in the number of more able candidates as predicted by teacher's estimates and candidate performance in the Application of Technology element.

The overall number of credit pass and the number obtaining an award at grade 1-4 have also increased.

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	45	32	23	40	26	18	40	14	N/A
RNA	45	33	25	40	24	15	40	13	N/A

Comments on grade boundaries for each assessable element

There has been an improvement in the overall success in Knowledge & Understanding (KU) where historically performance was below that of Reasoning & Numerical Analysis (RNA).

In KU there was a rise of one in the minimum mark for a grade 1 and grade 2 to compensate for this year's less demanding credit paper. However, the number of candidates achieving a credit pass has increased and the percentage achieving a grade 1-4 has risen.

In the RNA element the grade boundaries were all lowered to reflect the fact that this year's questions were slightly more challenging. This produced a very slight drop in the percentage of credit passes while the number of candidates achieving a grade 1-4 has risen.

Comments on candidate performance

General comments

The feedback on candidates' performance in the General paper indicated that it was fair, balanced and accessible. The full range of marks was achievable in each question.

In the Credit exam the markers' comments also indicated that this paper was fair, balanced and reflected the subject content. The full range of marks was again accessible in each question.

Areas of external assessment in which candidates performed well

General Level

It was noted that once again candidates performed well in the pneumatics and energy questions (Q3 and Q4).

Credit Level

Feedback indicated that candidates performed well in flowcharting (Q6), energy (Q2) and the description of the pneumatic circuits operation (Q9).

Across both papers the use of PBASIC has improved although some candidates continued to make fundamental errors, for example "if pin2 = 0 then goto label1" rather than "if pin2 = 0 then label1".

Areas of external assessment in which candidates had difficulty

General Level

Q5(a) many candidates could not state why a relay was required in the circuit.

Q6 the calculations involving the principle of moments was poorly answered.

Q7 many candidates did not know the correct symbol for a thermistor.

Q8(c) candidates consistently failed to state the function of a latch.

Credit Level

Q3 (c) completing the circuit diagram was not attempted by a significant number of candidates. Those candidates who did attempt this question often failed to wire the IC to the power supply.

Q3(d) many candidates were unable to state the purpose of a dot on an IC.

Q5(c) few candidates could state a type of switch operated by the magnetic piston.

Q7(b) many candidates could not read the graph to obtain the correct LDR resistance and a large number of candidates had difficulty with the voltage divider calculation.

Q9(e) explaining the need to restrict exhaust air was consistently poorly answered.

Q10(a) & (b) producing the Boolean expression from the truth table was poorly answered and a majority of the candidates could not state a difference between TTL and CMOS.

In both papers candidates consistently failed to state the **function** of the given programmable control sub-systems and instead listed a feature or characteristic. For example, “EEPROM is non-volatile memory” rather than “EEPROM is where a program is stored”.

Recommendations

Feedback to centres

Centres may wish to emphasise the following aspects when delivering the course prior to the 2006 examination:

Applied Electronics

Input transducers – reading the LDR graph
Voltage divider calculations and how to reverse the sensing action
TTL and CMOS characteristics
Developing a Boolean statement from a truth table
Wiring of ICs including the power connections
Function of a latch

Pneumatics

Magnetic piston with reed switch
Need to restrict exhaust air

Mechanical Systems

Calculations involving the principle of moments

Programmable Control

PBASIC commands associated with decisions and subroutines