UNIVERSITY OF MALTA

SECONDARY EDUCATION CERTIFICATE
SEC

COMPUTER STUDIES

May 2015

EXAMINERS' REPORT

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD

SEC Computing
May 2015
Examiners' Report

Part 1: Statistical Information

GRADE	1	2	3	4	5	6	7	U	ABS	TOTAL
PAPER A	49	132	175	139	65			38	7	605
PAPER B				38	75	54	29	24	17	237
TOTAL	49	132	175	177	140	54	29	62	24	842
% OF TOTAL	5.82	15.68	20.78	21.02	16.63	6.41	3.44	7.36	2.85	100

Table 1: Overall, statistical information

Eight hundred and forty two candidates applied to sit for the Computer Studies SEC level examination. This is one hundred and seventy one less candidates than last year.

Six hundred and five candidates applied to take the A-paper whereas two hundred and thirty seven opted for the B- paper. Twenty-four candidates were absent in both papers, of which seven were registered for paper A and seventeen were registered for paper B.

Part 2: Comments regarding candidate's performance

Paper I

Question	Topic Covered	Max	Average	Facility
3	Java Programming	10	5.2	0.52
10	Language Translators	6	3.2	0.53
4	Files	5	3	0.6
8	Application Software	6	3.6	0.6
5	Storage	10	6.3	0.63
7	System Software	7	4.4	0.63
11	Computing Acronyms	10	6.3	0.63
1	Logic	15	9.72	0.65
6	Databases	8	5.6	0.7
9	E-Learning	3	2.2	0.73
2	Computing Terms	5	4	0.8

Table 2: Performance and Facility Levels in Paper 1

The Java Programming question proved to be the most difficult for the candidates, followed by the question about language translation, files and application software. The questions on E-Learning and the one about computing terms were found to be the easiest topics covered in Paper 1.

Paper II A

Question	Topic Covered	Max	Average	Facility
2	Java Programming	15	7.87	0.52
5	Operating Systems	17	10.39	0.61
3	Logic & Number Representations	19	11.95	0.63
1	Input / Output & Character Codes	17	10.85	0.64
4	Programming Languages & Software	17	12.28	0.72

Table 3: Performance and Facility Levels in Paper II A

This paper had five questions, all compulsory. Three questions carried seventeen marks; one question carried nineteen marks while one question carried fifteen marks.

Candidates found the Java Programming question to be the most difficult question in this paper. The next most difficult topic turned out to be Operating Systems, followed by Logic and number representations. The easiest questions were the ones about Input / Output and the general questions about Programming Languages.

Paper II B

As in Paper IIA, all the questions in this paper were compulsory.

Question	Topic Covered	Max	Average	Facility
3	Computer Hardware	17	7.08	0.42
4	Data Storage & Processing	17	7.94	0.47
2	Programming	17	9.56	0.56
1	Logic	17	10.50	0.62
5	General Computer Terms	17	10.55	0.62

Table 4: Performance and Facility Levels in Paper II B

Candidates found the Computer Hardware question to be the toughest, followed by the question about Data Storage & Processing. The candidates found the logic question and the question about the General Computer terms to be the easiest with an equal facility index of 0.62. The programming question was right in the middle with a facility index of 0.56.

Interviews

As in previous years, interviews were conducted to verify the authenticity of the projects submitted earlier. Private candidates were called in and were questioned by a panel of members from MATSEC and the Computer Studies examination board. A good number of candidates exhibited their work and answered the questions presented by the panel. A few others, however, found themselves in difficulty even when answering the most basic questions about their project or the programming language in general.

Reports on Papers I, IIA & IIB

Paper 1

Question 1

The majority of the candidates answered this question correctly. Only few candidates didn't fill in the missing data and the logic circuits. A slightly larger number however encountered difficulties when answering part (d) – the part about binary shifting.

Question 2

Considering that the question involved only multiple-choice questions, candidates did very well with a few candidates giving a wrong answer for part (e).

Question 3

As in previous years, the programming question is usually the one that gives candidates a tough time. For part (a), a considerable amount of candidates couldn't tell the difference between a loop and a conditional statement. In part (b), candidates explained what the program is doing but failed to give the correct output. Very few candidates were able to rewrite the code using a different loop in part (c) of the question. Overall, very few candidates obtained a pass mark in the question.

Question 4

While most candidates managed to obtain a pass mark in this question, only few obtained full marks and missed at least one correct answer. In fact, very few candidates selected part (b) as a correct (true) answer.

Question 5

Some of the terms given in this question presented some difficulties to the candidates attempting this question. A few candidates could not come up with other terms for sequential or random access, and could not name Vector or Raster as types of devices in parts (g) and (h).

Question 6

The majority of candidates did well overall in this question. While few candidates experienced some problems naming the relationship between tables in part (a), more candidates answered correctly part (b) about the primary key and part (c) when naming other attributes from the customer table.

Question 7

While the majority of candidates did well in this question, most experienced problems in parts (d) and (e). In fact, few candidates could name the clipboard as the feature of the operating system responsible from transferring text and graphics between applications.

Question 8

An average number of candidates answered this question correctly. In part (a) however, some candidates gave trade names instead of application software titles. In part (b), while most candidates knew what HTML stands for, some did not know what it is used for.

Question 9

Most candidates knew what E-Learning is and gave a correct answer to this question including advantages and disadvantages.

Question 10

Candidates did well overall in this question and most could tell the difference between source code and executable code. However while most defined a compiler, an interpreter and an assembler, few were able to contrast and give complete answers for parts (b) and (c).

Question 11

Most candidates gave a correct even if a few missed the use. Most candidates obtained a wrong answer for part (e) and gave wrong answers for what EFT (Electronic Fund Transfer) stands for.

Paper 2 A

Question 1

The majority of the candidates answered part (a) correctly however a considerable amount failed to identify the CPU as the appropriate hardware device to process data. In part (b), candidates failed to identify a proper software packages to process databases and clipart. In part (d), few candidates could name a device that can access data in series, but had no problem naming a device that could access data randomly. In part (f), candidates failed to distinguish between the total number of possible characters and the number ranges that could be represented using an 8-bit system.

Question 2

Once again the question about programming proved to be the hardest for the candidates with a very low facility index. Candidates could in general answer recall questions but failed in the parts that tackled application. In part (b) for example, very few candidates managed to show knowledge of operator precedence. In part (d), a considerable amount of candidates failed to give the proper output for the given program. In part (e), most of the answers given were not only wrong in terms of program structure but were also lacking proper syntax.

Question 3

In general, candidates did well in this question. In part (c), a good number of candidates did well overall, but many failed to use the proper symbols for the logic gates. As a result, the candidates who had problems identifying the logic symbols, eventually had problems building the truth table in part (d) of the question. Consequently, in part (e) very few could build the logic circuit properly, and eventually draw the truth table.

Question 4

Although this was clearly the easiest question answered by the candidates, there were still a number of issues when identifying advantages and disadvantages between 4GLs and 3GLs and when giving examples of languages from these generations. On the other hand, in part (f) some candidates mistook piracy for copyright but on the whole no particular difficulties were noted.

Question 5

In part (a) of this question, a substantial amount of candidates gave names of operating systems when the question clearly asks for types. As a result, the majority of the candidates who answered correctly in part (a) gave also correct answers for part (b). Few candidates could explain what is meant by the term hierarchy and also very few candidates could label the hard disk diagram in terms of spindle, track and sector.

Paper 2 B

Question 1

In general most candidates answered correctly most of the sections within this question with the vast majority obtaining at least a pass mark in this question. According to the facility index, candidates found this question to be one of the easiest in the paper despite the question consisting of logic symbols and numerical representations. Candidates encountered difficulties mostly to carry out the calculations in parts (e) and (f).

Question 2

In part (a) of the question, candidates were expected to dry run the short program given and come up with an answer. Since no foreign input and only literal values were used in the program it is possible to come up with one definite answer, however some candidates answered both *Passed* and *Fail* for this question.

Other candidates found it particularly hard to present THREE types of errors that can occur in the program as given in part (b) while others could not associate the errors with the lines of code given in part (c).

Question 3

Candidates found this question to be the hardest from paper II especially in parts (a) and (b) where they were expected to label simple microprocessor architecture and name registers from the CPU. It is clear that in certain situations, while candidates appear to have an idea of what the answer should be, they find it hard to express their solution in writing. A considerable percentage of the candidates who failed to obtain a pass in this question obtained less than five marks.

Question 4

Statistics show that candidates found this question to be tough with a facility index following closely to that of question 3. Some candidates could not tell the difference between data integrity and data security (part a) while others appear to have difficulty understanding the concept, at least in theory, of data privacy. On the other hand the majority of candidates identified software and hardware procedures to reduce piracy (part e) and most could also discuss the negative effects of computerisation (part g).

Question 5

The candidates did well in this question and the topic appears to be a familiar one. Candidates found no problem in discussing RAM and ROM, main and secondary memory and types of documentation. A few on the other hand had problems describing objects as instances or copies of classes (part e).

Chairperson
2015 Examination Panel