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NSC 2011 CHIEF MARKER'S REPORT

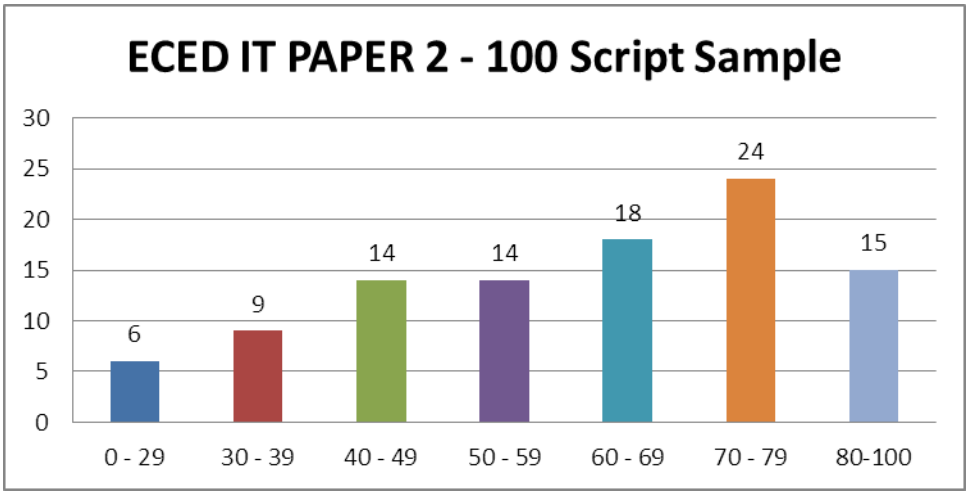
SUBJECT	INFORMATION TECHNOLOGY

PAPER	1

DATE OF EXAMINATION:	NOV 2011	DURATION:	3HRS

SECTION 1:

(General overview of Learner Performance in the question paper as a whole)



The learners appear to have fared a lot better in this better compared to previous years. This is of course in part due to the fact that 10 marks (approximately 5.5%) were automatically awarded. Centres vary quite dramatically in terms of their performance, so a great care was taken in trying to choose a representative sample.

SECTION 2:

Comment on candidates' performance in individual questions
(It is expected that a comment will be provided for each question on a separate sheet).

QUESTION 1
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
Average 7.6 Ave % 80.0% Median 8 Mode 8
Learners did very well in question 1 (Multiple choice) Alternative answers were approved at the National Memorandum discussions for: Q 1.1 Freeware or shareware Q 1.4 Signature or certificate Q 1.6 Spooling or Buffering
(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
(a) Provide suggestions for improvement in relation to Teaching and Learning
(d) Describe any other specific observations relating to responses of learners
(e) Any other comments useful to teachers, subject advisors, teacher development etc.

QUESTION 2
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered? Average 36.3 Ave % 60.0% Median 38.5 Mode 40 Total 58 This proved to be the second poorest answered question in the paper
(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
• Reading comprehension and a lack of knowledge (of terminology and the function of hardware and software) are some of the reasons learners get these answers incorrect. In addition learners need to understand that need to give full answers, especially where more than on mark is allocated. For example, in question 2.1.1, relating to the function of a chipset, some learners simply stated 'data transfer' as the essence of

their answer.

- Learners also need to interpret the full question. For example, Question 2.1.4 asked for the THREE advantages of using a USB port. Many learners related the question to flash disks and other USB devices and not the port itself.
- Question 2.1.5 (b) relating to register size was poorly answered. Learners should be aware that the size of the register dictates the largest number the CPU can store correctly and hence it also dictates the maximum size of RAM the CPU can work with. This then influences efficiency and performance.
- Question 2.18 (a) showed that many learners were not familiar with the concept of an instruction set and linked their answers to the instruction cycle. An instruction set is the basic set of instructions that the CPU recognises and executes.

(c) Provide suggestions for improvement in relation to Teaching and Learning

- Learners need to be encouraged to provide comprehensive answers to indicate that they fully understand the concepts being asked.
- Higher order questions need to be set for learners where they are required to compare systems in terms of performance and other factors to show that that have an understanding of the core concepts.

(d) Describe any other specific observations relating to responses of learners

- Learners often latch onto keywords and do not carefully analyse the whole sentence or question. Some learners one suspects carelessly gave advantages of UTP or fibre optic cabling in question 2.3.3 (b) for instance.

(e) Any other comments useful to teachers, subject advisors, teacher development etc.

- Learners must be encourages to make gross generalisations and value-laden judgments not backed up by facts.
- Many learners gave the impression in question 2.4.2 that all open source software was of a poor quality and virus-ridden.
- It is fine to say that there might be concerns with the quality or features of some open source software but broad sweeping statements should be avoided.

QUESTION 3

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average	7.2
Ave %	70.0%
Median	8
Mode	11
Total	11

This question was one the better answered questions in the paper.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

(c) Provide suggestions for improvement in relation to Teaching and Learning

- Teachers must ensure that learners have a full understanding of every-day concepts such as ADSL
- Again learners need to be encouraged to look at the mark allocation as an indication of the depth and extent of the answer required.
- Question 3.1.1 relating to ADSL was worth 3 marks and some learners simply stated something along the lines of it being a cheap Internet connection. A comprehensive sample answer would read something like the following: *An ADSL line is a permanent high-speed digital connection that is a single line that is split (using multiplexing) so that both voice and data can be used on the same line.*

(d) Describe any other specific observations relating to responses of learners

- Once again learners must be encouraged to give full, insightful answers that convince the marker that they know what they are talking about.
- Question 3.3.1 saw many learners give a one word answer of 'encryption' for an explanation of SSL.

e) Any other comments useful to teachers, subject advisors, teacher development etc.

- It is important that common-place technologies such as 3G and SSL are fully understood. It is clear that in some case learners are using these technologies without fully understanding them.

QUESTION 4

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average	7.4
Ave %	80.0%
Median	8
Mode	9
Total	9

This proved to be the best answered question in the paper.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

(c) Provide suggestions for improvement in relation to Teaching and Learning

(d) Describe any other specific observations relating to responses of learners

(e) Any other comments useful to teachers, subject advisors, teacher development etc.

QUESTION 5

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average	22.2
Ave %	50.0%
Median	22
Mode	22
Total	49

This proved to be, by far, the worst-answered question in the paper.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

- It is very alarming that this question on Programming and software development - Algorithms and Planning continues to be so poorly answered. Learning Outcome 4, dealing with this topic constituted approximately 60 % of the teaching time and overall assessment. It seems incredible that in some centres, virtually no candidates can score more than 30% in this specific question.
- Very little coding was required and still candidates fared very poorly due to a lack of knowledge and understanding of basic software development concepts such as
    - Modular programming
    - Validation techniques
    - Referential integrity in a database

(c) Provide suggestions for improvement in relation to Teaching and Learning

- Teachers must ensure that learners acquire all the basic knowledge and skills expected of them in this section.
- They need to practice the skills of problem solving in a variety of scenarios.
- Teachers need to put more emphasis on application of knowledge so that learners develop higher level reasoning.

(d) Describe any other specific observations relating to responses of learners

- Many learners do not know the correct terminology such as algorithms, modular programming and debugging tools
- Databases are the underlying data structure for most software solutions. It is vital that learners understand in clear terms the *practical* usage of relationships, referential integrity and validation techniques (not just the terminology).
- Learners are not specific in their answers. They answer will be partly correct but they do not explain fully what they mean.

e) Any other comments useful to teachers, subject advisors, teacher development etc.

- Practical experience in using databases and working through algorithms is critical.
- Learners need to understand when a specific loop or control structure is more

appropriate than another by being exposed to variety of different scenarios (they do not have to be very large, time consuming scenarios).

QUESTION 6

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average	30.0
Ave %	70.0%
Median	31.5
Mode	33
Total	43

This question proved to be fairly well answered. Marks were inflated due to the awarding of 10 marks for question 6.2.3 and 6.2.4 (b)

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

- A surprising number of learners related encryptions as a means of checking whether to trust the contents of a web page. The answers that were sought related to checking the author of the web page, who the publisher of the information is and the reliability of the information.
- Very few learners could adequately explain what a honeypot was in question 6.2.5. A honeypot is a vulnerable computer that is set up to entice an intruder to break into it. Honeypots are used by companies so they can analyse an attack. These computers, which appear real to the intruder, actually are separated safely from the company's network.

GENERAL COMMENTS:

- Learners do not always motivate answers where required and do not always apply their answer to a specific "scenario". They need to practice applying their knowledge– not just "rote" learning of definitions etc..
- Learners need to learn and understand the correct terminology and apply it correctly.
- Many learners do not understand what is being asked and do not read carefully enough. They scan specific keywords in a question that they recognise and give any answer based on that term instead of reading what is being asked.
- Learners must be trained to read, comprehend and express themselves to the best of their abilities.
- Learners are sometimes losing marks in questions where they need to explain or give solutions, because they only give short answers and end up omitting key words that are expected as part of the answer. They do not always know the differences between the assessment verbs such as: explain, name, describe etc.
- Incorrect numbering and poor penmanship is a problem when marking scripts. Learners need to be made aware of this.

SIGNATURE OF CHIEF MARKER: _____