

Examination report – December 2014 series

2730-018 Programming Principles

Section 1 – Areas of good performance

Syllabus reference: 1.5 / 1.6 – Describe the main computer components crucial to program execution. Describe the procedures involved for programs to be loaded, executed and discarded. On the whole, this section was answered satisfactorily. Some candidates failed to indicate data directions on the block diagram.

Syllabus reference: 1.9 / 1.10 – Explain the differences between machine code, low-level languages and high-level languages. Give examples of machine code instructions. Generally solutions to this section were good. When asked for an example of a machine code instruction and to state its purpose, several candidates used assembly language and not machine code.

Syllabus reference: 1.16 – Obtain and analyse a program code for a high-level language. Although candidates could state the function of the different types of command in the program, very few could state the purpose and hence describe its operation.

Syllabus reference: 1.21 – Describe basic program structures. The meaning of the terms declaration, execution and termination was answered satisfactorily. However, the program structures were often inaccurate and incomplete.

Syllabus reference: 1.22 – Explain basic program controls. There were some very good solutions to this section. Candidates struggled to provide two ways of providing repetition within a program.

Syllabus reference: 1.24 – Identify basic program design components. Candidates had very little idea of what the components of program design were. The description of two types of documentation associated with program design was answered satisfactorily.

Syllabus reference: 1.28 – Draw a flowchart for a given process showing process boxes, decision boxes, input/output boxes, using a simple routine. On the whole, solutions to this section were very good. Some of the flowcharts for a program that will show the scanning and key detection of a keyboard lacked detail.

Syllabus reference: 1.31 / 1.32 / 1.39 – Describe the basic concepts of procedure programming. Describe the basic concepts of object-orientated programming. List programming languages and identify their levels. Solutions to this section were very good.

Syllabus reference: 1.46 - Produce coding for a simple HTML Web page using a plain text editor ie without the use of software, which outputs as HTML. Candidates knew the basic structure required for HTML coding but were unable to use the FRAME tags to subdivide the page area.

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| Section 2 – Areas for development |
| <p>Syllabus reference: 1.27 – Define the function and use of algorithms. With reference to algorithms in program development, candidates were unable to state what a 'function' was and why they are used. Candidates were unable to break the problem down into individual statements/steps and produce an algorithm for the program.</p> <p>Syllabus reference: 1.45 – Identify display formats and explain the difference between display coding (tagging) and computer languages. Explanations were often inaccurate and vague in this section.</p> |
| Section 3 – Recommendations |
| <p>Candidates need to improve their knowledge of the following areas.</p> <ul style="list-style-type: none"> • Analysis of high level programs. • Writing algorithms for a simple program specification. |