Advance Information for Summer 2022

A Level

Computer Science

H446

We have produced this advance information to help support teachers and students with revision for the Summer 2022 examinations.

Information

- This notice covers all examined components.
- This notice does **not** cover non-examined assessment (NEA) components.
- There are no restrictions on who can use this notice.
- You are **not** permitted to take this notice into the exam.
- This document has **3** pages.

Advice

- It is advised that teaching and learning should still cover the entire subject content in the specification.
- Students and teachers can discuss this advance information.
- Students can ask their teachers for advice.

If you have any queries about this notice, please call our Customer Support Centre on **01223 553998** or email general.qualifications@ocr.org.uk.

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Guidance

- The following areas of content are suggested as key areas of focus for revision and final preparation.
- It is important to note that advance information is NOT being provided for every question. Students are advised that some questions will be on content not listed.
- The aim should still be to cover all specification content in teaching and learning.
- Some questions may be answerable using more than one area of specified content, including ones not listed.
- The information is presented in specification order and not in question order.

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Specification reference	Name of topic	Sub part of topic directly assessed in some form
1.1.1	Structure and function of the processor	(b) The Fetch-Decode-Execute Cycle, including its effect on registers (d) The use of pipelining in a processor to improve efficiency (e) Von Neumann, Harvard and contemporary processor architecture
1.1.2	Types of processor	(a) The differences between and uses of CISC and RISC processors
1.2.1	Systems Software	(d) Scheduling: round robin, first come first served, multi-level feedback queues, shortest job first and shortest remaining time
1.2.2	Applications Generation	(d) Translators: Interpreters, compilers and assemblers (e) Stages of compilation (lexical analysis, syntax analysis, code generation and optimisation)
1.2.4	Types of Programming Language	(c) Assembly language (including following and writing simple programs with the Little Man Computer instruction set). See appendix 5d
1.3.2	Databases	(d) SQL – Interpret and modify. See appendix 5d (f) Transaction processing, ACID (Atomicity, Consistency, Isolation, Durability), record locking and redundancy
1.3.3	Networks	(b) The internet structure: • The TCP/IP Stack
1.4.1	Data Types	(f) Convert positive integers between Binary Hexadecimal and denary (g) Representation and normalisation of floating point numbers in binary (j) How character sets (ASCII and UNICODE) are used to represent text

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Specification reference	Name of topic	Sub part of topic directly assessed in some form
2.1.1	Thinking abstractly	(a) The nature of abstraction (b) The need for abstraction
2.1.2	Thinking ahead	(c) The nature, benefits and drawbacks of caching (d) The need for reusable program components
2.2.1	Programming techniques	(b) Recursion, how it can be used and compares to an iterative approach (c) Global and local variables d) Modularity, functions and procedures, parameter passing by value and by reference (e) Use of an IDE to develop/debug a program (f) Use of object oriented techniques
2.2.2	Computational methods	(f) Learners should apply their knowledge of: • performance modelling • visualisation to solve problems
2.3.1	Algorithms	(e) Algorithms for the main data structures, (stacks, queues, trees, linked lists, depth-first (post-order) and breadth-first traversal of trees)

END OF ADVANCE INFORMATION

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