**Paper 1 Section A**

Questions in this section will focus on the topics listed below. Where appropriate we have listed both the topic and content that will be assessed. If there is no content listed then questions may come from any of the content in that overall topic area in the specification.

There are **33 marks** in this year’s section A (this is about 13% of the total A-level marks) There are questions: Q1 = 3 marks ; Q2= 11 marks; Q3=4 marks; Q4=15 marks. There is a copy of the EAD for these questions in ***Appendix (copy of Part A of the 2022 EAD) below.***

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| Spec ref | Name of topic | Content |  Past Paper Questions |
| 4.1.1.16 | Recursivetechniques |  | [**https://kyxezok.exampro.net**](https://kyxezok.exampro.net/) |
|
| 4.2.1.2 | Single- and multi- dimensional arrays(or equivalent) |  | [**https://MOTYUEJ.exampro.net**](https://motyuej.exampro.net/) |
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| 4.2.1.4 | Abstract datatypes/datastructures | Be able to distinguish between static and dynamic structures and compare their uses, as well as explaining the advantages and disadvantages of each. |
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| 4.2.2 | Queues |  | [**https://WISIGEO.exampro.net**](https://wisigeo.exampro.net/) |
| 4.2.3 | Stacks |  | [**https://YOBOOIQ.exampro.net**](https://yobooiq.exampro.net/) |
| 4.2.4Graphs | Be aware of a graph as a data structure used torepresent more complex relationships.**AND**Be able to explain the terms:• graph• weighted graph• vertex/node• edge/arc• undirected graph• directed graph.**AND**Know how an adjacency matrix and an adjacencylist may be used to represent a graph. | [**https://QEYIAUQ.exampro.net**](https://qeyiauq.exampro.net/) |
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| 4.2.5 | Trees | Know that a tree is a connected, undirectedgraph with no cycles. | <https://iujicob.exampro.net/>  |
|
| 4.3.1 | Graph-traversal |  | [**https://GEHEVIP.exampro.net**](https://gehevip.exampro.net/) |
| 4.3.4 | Searchingalgorithms |  | [**https://YIGATED.exampro.net**](https://yigated.exampro.net/) |
|
| 4.3.5 | Sorting algorithms |  | [**https://NICYUAS.exampro.net**](https://nicyuas.exampro.net/) |
| 4.3.6 | Optimisationalgorithms |  | Only one previous question, which is a graph traversal |
|
| 4.4.1.1 | Problem-solving | Be able to develop solutions to simple logic problems. | [**https://UAHOMYE.exampro.net**](https://uahomye.exampro.net/) |
| 4.4.1.2 | Following andwriting algorithms | Be able to hand-trace algorithms. |  |
|
| 4.4.4.3 | Order of complexity |  | [**https://BILOWYD.exampro.net**](https://bilowyd.exampro.net/) |
| 4.4.4.7 | Halting problem |  | [**https://SOXUSIE.exampro.net**](https://soxusie.exampro.net/) |



**Paper 7517/1 (all programming languages) Section B – No advance information for this section**

**Paper 7517/1 (all programming languages) Section C – No advance information for this section** – questions in this section will refer to the Skeleton Program and could also refer to any content from sections 4.1, 4.2, 4.3 and 4.4 of the specification.

**Paper 7517/1 (all programming languages) Section D – No advance information for this section**

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**Paper 2**

Questions in this examination will focus on the topics listed below. Where appropriate we have listed both the topic and content that will be assessed. If there is no content listed then questions may come from any of the content in that overall topic area of the specification

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| **Spec-ref** | **Name of topic** | **Content** | **Past Paper Questions** |
| 4.5.2 | Number bases |  | [**https://KOTAREY.exampro.net**](https://kotarey.exampro.net/) |
| 4.5.3 | Units ofinformation | No previous questions on kibi,mebi,gibi BUT expect it in the exam! | [**https://FURUDIK.exampro.net**](https://furudik.exampro.net/) |
|  |
| 4.5.4.2 | Unsigned binaryarithmetic |  | [**https://AYDIUOV.exampro.net**](https://aydiuov.exampro.net/) |
|  |
| 4.5.4.3 | Signed binaryusing two’scomplement |  | [**https://TUUYQYD.exampro.net**](https://tuuyqyd.exampro.net/) |
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| 4.5.4.4 | Numbers with afractional part |  | [**https://SENIGEN.exampro.net**](https://senigen.exampro.net/) |
|  |
| 4.5.4.6 | Absolute andrelative errors | Be able to calculate the absolute error ofnumerical data stored and processed incomputer systems.**AND**Be able to calculate the relative error ofnumerical data stored and processed incomputer systems. | [**https://VADADOP.exampro.net**](https://vadadop.exampro.net/) |
| 4.5.4.8 | Normalisation of floating point form |  | See 4.5.4.4 |
| 4.5.6.7 | Digital representation of sound | Calculate sound sample sizes in bytes. | [**https://FUCOCOS.exampro.net**](https://fucocos.exampro.net/) |
| 4.5.6.8 | Musical Instrument Digital Interface (MIDI) |  | [**https://TUXORIY.exampro.net**](https://tuxoriy.exampro.net/) |

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| 4.6.1.2 | Classification of software |  |  [**https://BOVUYOC.exampro.net**](https://bovuyoc.exampro.net/) |
| 4.6.1.3 | System software |  |  See 4.6.1.2 |
| 4.6.1.4 | Role of anoperating system(OS) | Know that the OS handles resource management, managing hardware to allocate processors, memories and I/O devices among competing processes. | [**https://FELIHAE.exampro.net**](https://felihae.exampro.net/) |
| 4.6.2 | Classification ofprogramminglanguages | Know that low-level languages are consideredto be:• machine-code• assembly language.**AND**Describe machine-code language andassembly language.**AND**Understand the advantages and disadvantagesof machine-code and assembly languageprogramming compared with high-levellanguage programming. | [**https://VINEBUF.exampro.net**](https://vinebuf.exampro.net/) |
| 4.6.4 | Logic gates |  | [**https://XUCEJOI.exampro.net**](https://xucejoi.exampro.net/) |
| 4.6.5 | Boolean algebra |  | [**https://YODEFEU.exampro.net**](https://yodefeu.exampro.net/) |

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| 4.7.1 | Internal hardwarecomponents of acomputer | Be able to explain the difference between vonNeumann and Harvard architectures anddescribe where each is typically used. | [**https://JUGIWOJ.exampro.net**](https://jugiwoj.exampro.net/) |
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| 4.7.2 | The storedprogram concept |  | [**https://NYTYNUQ.exampro.net**](https://nytynuq.exampro.net/) |
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| 4.7.3.3 | The processorinstruction set |  | [**https://YAWOMIT.exampro.net**](https://yawomit.exampro.net/) |
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| 4.7.3.4 | Addressing modes |  | [**https://XUKUWYE.exampro.net**](https://xukuwye.exampro.net/) |
| 4.7.3.5 | Machine-code/assemblyLanguage operations |  | [**https://FOWUEYV.exampro.net**](https://fowueyv.exampro.net/) |
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| 4.7.4.1 | Input and outputdevices |  | [**https://YYCUEUH.exampro.net**](https://yycueuh.exampro.net/) |
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| 4.7.4.2 | Secondary storagedevices | Explain the need for secondary storage within acomputer system.**AND**Know the main characteristics, purposes,suitability and understand the principles ofoperation of the following devices:• hard disk• optical disk• solid-state disk (SSD). | [**https://LYHUVEX.exampro.net**](https://lyhuvex.exampro.net/) |
| 4.8.1 | Individual (moral),social (ethical),legal and culturalissues andopportunities |  | [**https://HODAQOS.exampro.net**](https://hodaqos.exampro.net/) |
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| 4.9.1 | Communication |  | [**https://LAWEWEJ.exampro.net**](https://lawewej.exampro.net/) |
| 4.9.2.2 | Types ofnetworkingbetween hosts |  | [**https://GODEMEC.exampro.net**](https://godemec.exampro.net/) |
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| 4.9.3.1 | The Internet andhow it works | Describe the term 'uniform resource locator'(URL) in the context of internetworking.**AND**Explain the terms ‘fully qualified domain name’(FQDN), ‘domain name’ and ‘IP address’.**AND**Describe how domain names are organised.**AND**Understand the purpose and function of thedomain service and its reliance on the DomainName Server (DNS) system. | [**https://MUMEBEU.exampro.net**](https://mumebeu.exampro.net/) |
| 4.9.4.11 | Thin- versus thick-client computing |  | [**https://EOCAJUJ.exampro.net**](https://eocajuj.exampro.net/) |

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| 4.10.1 | Conceptual datamodels and entityrelationshipmodelling |  | [**https://PIVUFIU.exampro.net**](https://pivufiu.exampro.net/)(I’ve put all the DB questions together |
| 4.10.2 | Relationaldatabases | The content in this section will not be directlyassessed but students will need to have anunderstanding of it to answer other questions. |
| 4.10.3 | Database designand normalisationtechniques |  |
| 4.10.4 | Structured QueryLanguage (SQL) |  |

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| 4.12.1.3 | Functionapplication |  | [**https://NIIADUZ.exampro.net**](https://niiaduz.exampro.net/) |
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| 4.12.1.5 | Composition offunctions |
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| 4.12.2 | Writing functionalprograms |
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| 4.12.3 | Lists in functionalprogramming |
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# Appendix (copy of Part A of the 2022 EAD)

Answer **all** questions.

You **must save** this document at regular intervals or you may lose your work.

**Section A**

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| **Question 01** |  |  |
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| **Question 02** |  |  |
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| **Question 03** |  |  |
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