

AS COMPUTER SCIENCE

Paper 1

June 2020

Preliminary Material

To be opened and issued to candidates on or after **1 March 2020** subject to the instructions given in the **Teachers' Notes** (7516/1/TN).

Note

- The **Preliminary Material, Skeleton Program** and **Data Files** are to be seen by candidates and their teachers **only**, for use during preparation for the examination on **Tuesday 19 May 2020**. They **cannot** be used by anyone else for any other purpose, other than that stated in the instructions issued, until after the examination date has passed. They must **not** be provided to third parties.

Information

- A Skeleton Program is provided separately by your teacher and must be read in conjunction with this Preliminary Material.
- You are advised to familiarise yourselves with the Preliminary Material and Skeleton Program before the examination.
- A copy of this Preliminary Material and the Skeleton Program will be made available to you in hard copy and electronically at the start of the examination.
- You must **not** take any copy of the Preliminary Material, Skeleton Program and Data Files or any other material into the examination room.

Candidates will need access to a text file editor, such as Notepad or TextEdit.

INSTRUCTIONS FOR CANDIDATES

The question paper is divided into **three** sections.

Section A

You will be asked to create a new program and answer questions **not** related to the **Preliminary Material** or **Skeleton Program**.

Section B

Questions will refer to the **Preliminary Material** and the **Skeleton Program**, but will not require programming.

Section C

Questions will use the **Preliminary Material** and the **Skeleton Program** and may require the `ascii.txt`, `greyscale.txt`, `image1.txt`, `image2.txt` and `image3.txt` **Data Files**.

Electronic Answer Document

Answers for **all** questions, for **all** sections, must be entered into the word-processed document made available to you at the start of the examination and referred to in the question paper rubrics as the **Electronic Answer Document**.

Preparation for the Examination

You should ensure that you are familiar with this **Preliminary Material** and the **Skeleton Program** for your programming language.

Figure 1 shows an ASCII art image loaded from the `image1.txt` data file.

Figure 1

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The **Skeleton Program** uses printable ASCII characters to display images. The program allows the user to load an image from a text file. The option "S - Save image" saves the image in such a way that it can be viewed in a text editor, such as Notepad or TextEdit.

The **Skeleton Program** can also load greyscale images where the shade of each pixel is encoded by an 8-bit integer. 8-bit integer encoding allows 256 possible shades of grey. The program changes the greyscale values into ASCII characters. **Figure 2** shows the image created when loading the `greyscale.txt` data file.

Figure 2

```

TestImage2
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```

The data files `ascii.txt`, `image2.txt` and `image3.txt` available with this **Preliminary Material** also contain parts of images.

END OF PRELIMINARY MATERIAL

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