



---

# **GCSE EXAMINERS' REPORTS**

---

**COMPUTER SCIENCE**

**SUMMER 2019**

Grade boundary information for this subject is available on the WJEC public website at:  
<https://www.wjecservices.co.uk/MarkToUMS/default.aspx?!=en>

### **Online Results Analysis**

WJEC provides information to examination centres via the WJEC secure website. This is restricted to centre staff only. Access is granted to centre staff by the Examinations Officer at the centre.

### **Annual Statistical Report**

The annual Statistical Report (issued in the second half of the Autumn Term) gives overall outcomes of all examinations administered by WJEC.

<b>Components</b>	<b>Page</b>
Component 1	1
Component 2	3

# COMPUTER SCIENCE

## GCSE (NEW)

Summer 2019

### Component 1 Understanding Computer Science

#### General Comments

Despite the mean mark increasing considerably in this paper, candidates continue to find Component 1 demanding. The mean mark this series was still below half of the total marks available, with very few candidates achieving a mark over 80.

At question level, it was pleasing to note an overall improvement in the facility factor of questions and their spread was broadly similar to the previous series.

#### Comments on individual questions/sections

- Q.1** The best answered question on the paper, candidates showed a good understanding of the relationships between the data storage units.
- Q.2** Around half of candidates were able to describe the functional characteristics of the given types of memory well.
- Q.3** Over half of candidates were able to correctly complete the given truth table. For Q3bii, many candidates incorrectly named the OR operator and missed the requirement for both conditions to be exclusively TRUE.
- Q.4** This was the most poorly answered question of the paper. Candidates were required to compare two secondary storage devices that could be used to allow an organisation to copy a 5 TB database from one computer system to another. Most candidates suggested a flash memory drive for this task, which would not be suitable given the limited storage capacity.
- Q.5** Around half of candidates were able to answer this question well. Most were able to state what is meant by a network and describe the characteristics of LAN and WAN types. Few candidates were able to draw a diagram to show a bus topology and fewer candidates were able to draw a mesh topology. The advantages and disadvantages given for each were superficial at times, particularly for the mesh topology.
- Very few candidates were able to explain the typical contents of an acceptable use policy, despite knowing its purpose.
- Q.6** Most candidates were able to determine the lowest cost routes from node A to each destination. Only a few were able to give one advantage and one disadvantage of circuit switching over packet switching.
- Q.7** Around half of candidates answered this question well.
- Q.8** Only a few candidates were able to accurately state the purpose of standardised character sets and how they work. Many were able to name at least one standardised character set.

- Q.9** Many candidates had difficulties with the Boolean algebra question and lacked confidence in their use Boolean identities and rules. Q9b was poorly answered by most candidates.
- Q.10** Around half of candidates did well in this question.
- Q.11** Only around a quarter of candidates were able to design a suitable data structure for storing the example data. Very few correctly named this type of structure and the required data type. Around a fifth of candidates did not attempt this question at all.
- Q.12** Under a third of candidates were able to name the IDE facility or describe the use of the named facility. Many candidates were able to name the editor facility but struggled beyond that.
- Q.13** Around a quarter of the available marks were awarded to candidates for completing sentences about the program given. Very few candidates were able to correctly identify the error detected and suggest a suitable change to this code to address the error and a very few candidates were able to correctly suggest a suitable change to address the inefficient use of memory.
- Q.14** Most candidates were able to give at least one environmental impact of digital technology on wider society.
- Q.15** Most candidates showed an adequate understanding of the requirements of the question and a satisfactory knowledge of the indicative content. They addressed the question, discussing user interfaces and I/O devices and used appropriate technical terminology referring to the indicative content.

### **Summary of key points**

- Candidates had a reasonably good understanding of storage units, truth tables, logical operations, and route costs. They performed best in these questions.
- Candidates found the questions on secondary storage mediums, Boolean algebra, data structures and IDE tools demanding, and this was reflected in the low facility factor for these questions.

# COMPUTER SCIENCE

## GCSE (NEW)

Summer 2019

### Component 2 Computational Thinking and Programming

#### General Comments

Component 2 is a practical examination with candidates required to demonstrate the application of knowledge and understanding at all times.

Most of the candidates demonstrated a good understanding of the specification, however, question attempted percentages were not available this series. Many candidates were well prepared, and many excellent answers were evident. There was evidence also that some candidates had been well prepared for some of the practical programming elements.

#### Comments on individual questions/sections

The areas of assessment primarily focused around:

##### Algorithms

A similar performance was seen to previous comparable series. Candidates often find algorithms challenging and this year was no different. However, it was pleasing to see that the dry running of algorithms has improved.

##### Mark-up Language (HTML)

Mark-up Language questions were deemed to be more accessible and many candidates demonstrated a good level of understanding and knowledge here.

##### Assembly Language

Assembly Language is new to this specification and was examined to a slightly deeper level with this series. This was considered to be a very demanding question and topic to teach in centres.

##### Java programming (within the Greenfoot environment)

Java programming was done well by a number of candidates. It is pleasing to see that candidates can program to a functional level within an examination setting.

#### Summary of key points

- It is vital when preparing candidates for this component that centres realise this is a fully applied component. With all work demonstrated by candidates needing to be functional. Centres are reminded that candidates' Greenfoot worlds need to open, load, compile and run for the examiner to be able to award more credit. Functional/elegant code is defined at GCSE level to be code which works (has the intended outcome) and there is no "correct way of coding" set by the WJEC. Candidates will be given credit for all working aspects of Java coding.



WJEC  
245 Western Avenue  
Cardiff CF5 2YX  
Tel No 029 2026 5000  
Fax 029 2057 5994  
E-mail: [exams@wjec.co.uk](mailto:exams@wjec.co.uk)  
website: [www.wjec.co.uk](http://www.wjec.co.uk)