



Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2018

Centre Number

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Candidate Number

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Digital Technology

Assessment Unit AS 2

assessing

Fundamentals of
Digital Technology



SDT21

[SDT21]

FRIDAY 8 JUNE, AFTERNOON

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided.

Do not write outside the boxed area on each page or on blank pages.

Complete in black ink only. **Do not write with a gel pen.**

Answer **all five** questions.

You are not permitted to use any calculating aid in this paper.

INFORMATION FOR CANDIDATES

The total mark for this paper is 100.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Questions **2(g)**, **3(e)**, **4(e)** and **5(d)**.



- 1 (a) Explain how both positive and negative numbers can be represented in binary using the two's complement system.

[4]

- (b) Convert each of the following two's complement binary numbers into decimal. Show your working out.

00001111_2

11100001_2

[4]



- (f) The capacity of a particular hard drive is 1TB. Write down what 'TB' stands for and state how many gigabytes it contains.

TB _____

Number of gigabytes _____ [2]

- (g) Discuss the benefit of using Unicode instead of ASCII as a character set.

_____ [3]





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[Turn over



20SDT2105

2 (a) Explain each of the following terms.

Data

Information

Knowledge

[3]

(b) List three factors, apart from accuracy, which can affect the quality of information.

1.

2.

3.

[3]



A book can be reserved at a library by completing a form. The librarian keys the data from these forms into a database.

(c) Explain how double entry can be used to detect errors in this case.

[3]

Four of the steps in the calculation of a modulus 11 check digit are listed below.

1. Each digit is given a weighting
3. The sum is calculated
4. The total is divided by 11 and the remainder obtained
5. The remainder is subtracted from 11

(d) What is meant by the weighting of a digit?

[1]

(e) Step 2 is missing. Identify this step.

[2]

[Turn over





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20SDT2109

3 (a) Describe each of the following components of a computer system.

Main memory

Address bus

Port

[6]



(b) Explain how cache memory is used by the processor.

[3]

Optical and flash are types of secondary storage media.

(c) Explain why secondary storage is needed.

[3]

(d) Describe how data is written to a DVD.

[3]

[Turn over



(e) Evaluate the suitability of using a USB memory stick for backing up data.

[5]





4 System software includes an operating system and utility programs.

(a) Describe the purpose of an operating system.

[3]

(b) Describe each of the following types of operating system.

Multiprocessing

Multi-tasking

[6]

[Turn over



(c) Explain how archive software is used by a typical business.

[2]

An organisation uses generic software for a range of business applications.

(d) Using suitable examples, explain the difference between generic software and special purpose software.

[4]



5 (a) Explain each of the following Web technology terms.

URL

http

Web server

[6]



(b) Explain how the International Telecommunications Union (ITU) plays an important part in Web technology.

[3]

(c) Describe the output from each of the following HTML tags.

(i) `Home page`

[3]

[Turn over





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Question Number	Marks
1	
2	
3	
4	
5	

Total Marks	
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Examiner Number

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