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Centre Number

Candidate Number

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2018

Digital Technology

Assessment Unit AS 1
assessing
Approaches to System Development

[SDT11]
SDT11

MONDAY 4 JUNE, MORNING

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.

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 **1(d)**, **2(e)**, **3(d)**, **4(d)** and **5(c)**.

1 **(a)** Describe the role of each of the following during the development of an information system.

The systems analyst

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The programmer

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_____ [6]

(b) Some of the user requirements for a new hotel reservation system are shown in the table below.

Ref	User requirement
R101	Room reservations may be made via the website, by phone or by post
R106	Online room reservations must be processed in real time
R113	The system must integrate fully with the existing accounting system

By referring to the table, explain what is meant by

A non-functional requirement

A functional requirement

[4]

[Turn over

11465.06 **R**

(c) The context (level 0) DFD for a sales order processing system is shown below.

- When an order is received, the stock file and customer file are updated

- When a payment is received, the customer file is updated

Produce a level 1 DFD for this system as described above.

[5]

11465.06 **R**

(d) A company sells its products globally from a single warehouse. The company requires a computerised stock control system to replace the current system.

Evaluate the use of observation as a method of fact finding in this case.

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[Turn over

11465.06 **R**

24SDT1105

2   Storyboarding and prototyping can be used during the design of a system.

(a) Describe how storyboarding is used.

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_____ [3]

(b) A prototype is used to enable the user to provide feedback to the developer.

Explain how a prototype can be used to help design the data model for a system.

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_____ [4]

11465.06 **R**

24SDT1106

The test plan for a stock control system includes a number of test cases.

(c) Explain what is meant by a test case.

_____

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_____ [2]

(d) The test plan includes test data for the quantity to be used when a product is reordered. This quantity should be an integer in the range 1 to 100.

The table below shows part of the test plan.

Test item: reorderQuantity

Test data	Type of test data	Purpose of test data
50	Valid/normal	To check that a reorder quantity within the range is processed correctly
−50		
'X'		
100		

Complete the table. [6]

[Turn over

(e) System testing and acceptance testing were used with the stock control system.

Compare the purpose of each of these types of testing.

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11465.06 **R**

24SDT1109

3 **(a)** Documentation is produced during system development. Identify three main elements in each of the following.

Technical documentation

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User documentation

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_____ [6]

24SDT1110

(b) Describe the advantages and disadvantages of the pilot changeover method.

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_____ [6]

(c) Explain why data conversion may be needed for a new information system.

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_____ [2]

[Turn over

11465.06 **R**

24SDT1111

(d) Over time the amount of corrective maintenance required for a system will reduce but the amount of adaptive maintenance required will increase.

Discuss this claim.

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11465.06 **R**

4 **(a)** Describe the main features of the waterfall model.

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An information system is being developed. The project manager uses a Gantt chart and critical path analysis.

(b) The Gantt chart identifies the start date of each stage in the project.

Identify three other items of information which are identified in a Gantt chart.

1. _____

2. _____

3. _____ [3]

(c) Explain the term critical path.

_____

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[Turn over

11465.06 **R**

(d) Discuss how the use of critical path analysis gives the project manager more control over the project.

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(e) Explain why an organisation should have a disaster recovery plan.

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11465.06 **R**

24SDT1117

5 **(a)** Explain each of the following programming terms.

Syntax

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Data type

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Variable

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_____ [6]

(b) A company has 100 hourly paid employees.

Part of the algorithm for calculating the weekly pay for each employee is shown below.

Input the number of hours worked
Multiply the hours worked by the rate per hour to get the basic pay
If the hours worked exceed 35, increase the basic pay by 10%

By referring to the description above, explain what is meant by each of the following.

A sequence

Selection

[Turn over

11465.06 **R**

A count controlled loop

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_____ [9]

(c) Discuss how the use of inheritance in the object-oriented approach should result in improved productivity in developing software.

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_____ [5]

11465.06 **R**

24SDT1120

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11465.06 **R**

24SDT1122

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24SDT1123

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24SDT1124

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
Total Marks	

Examiner Number

237205