cea

Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2017

Centre Number

Candidate Number

Digital Technology

Assessment Unit AS 1

assessing

Approaches to System Development

[SDT11]
FRIDAY 26 MAY, MORNING

SDT11

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(a)**, **3(b)**, **4(a)(ii)** and **5(d)**.

10938

24SDT1101

1 A computer system can be developed in a number of ways.

(a) Briefly compare the waterfall model and the agile approaches to system development.

_____

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_____ [5]

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(b) Explain what is meant by each of the following in the context of a software project.

A constraint

_____

_____

_____

_____

A risk

_____

_____

_____

_____ [4]

[Turn over

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24SDT1103

One of the responsibilities of a project manager is to allocate resources.

(c) Identify three resources which will be allocated.

1. _____

2. _____

3. _____ [3]

(d) Identify two other responsibilities of a project manager.

1. _____

_____

2. _____

_____ [2]

A large software project involves a team of programmers using technical documentation to develop code.

(e) Identify four components of technical documentation.

1. _____

_____

2. _____

_____

3. _____

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4. _____

_____ [4]

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24SDT1104

(f) Describe the importance of version management during system development.

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_____ [4]

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24SDT1105

2 **(a)** Describe how each of the following can be used to design the user interface.

Prototyping

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_____

_____

_____

_____

Storyboarding

_____

_____

_____

_____

_____

_____ [6]

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(b) A test plan is produced for a new computer system. Identify four components you would expect to find in a test plan.

1. _____

_____

2. _____

_____

3. _____

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4. _____

_____ [4]

[Turn over

10938

(c) A business which uses a computerised information system has implemented a disaster recovery plan.

(i) Explain why the business needs a disaster recovery plan.

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_____ [4]

(ii) State the main difference between a differential backup and an incremental backup.

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_____ [2]

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24SDT1108

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(Questions continue overleaf)

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24SDT1109

3 **(a)** One reason for the 'software crisis' was that many software systems were delivered over budget.

Identify three other reasons that caused the 'software crisis'.

1. _____

_____

2. _____

_____

3. _____

_____ **[3]**

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24SDT1110

(b) A stock control system is required for a large and busy warehouse in which heavy equipment is located and retrieved.

The systems analyst decides to use document sampling instead of observation as the fact-finding method.

Evaluate the analyst's choice of fact-finding method.

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[Turn over

(c) A fish and chip shop distributes its menu to customers. Customers can order food by telephone. The food is delivered to the customer's home. Customers pay and receive a receipt.

(i) Produce a context data flow diagram (DFD) for this system.

[6]

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24SDT1112

(ii) Explain how a level 1 DFD could be produced from a context level DFD.

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_____ [4]

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24SDT1113

4   An organisation with a number of offices throughout the country introduced a computerised stock control system.

(a)   Different changeover methods were considered for the implementation of the system.

(i)   Explain how a system is implemented using direct changeover, and state one advantage and one disadvantage of this method.

Explanation

_____

_____

_____

_____

Advantage

_____

_____

Disadvantage

_____

_____ [4]

24SDT1114

(ii) The system was implemented using the pilot method. Evaluate the organisation's choice of changeover method.

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_____ [6]

24SDT1115

(b) Explain what data conversion was required if the computerised system replaced a manual system.

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_____ [4]

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(c) The system requires adaptive maintenance.

(i) Identify two other types of software maintenance.

1. _____

_____

2. _____

_____ [2]

(ii) Explain what is meant by adaptive maintenance.

_____

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_____ [3]

[Turn over

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5 An Integrated Development Environment (IDE) includes the facility to translate programs.

(a) List four other facilities provided by an IDE.

1. _____

_____

2. _____

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3. _____

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4. _____

_____ [4]

(b) Explain why a program might need to be translated.

_____

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_____ [4]

(c) Explain what is meant by a condition-controlled loop.

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_____ [4]

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24SDT1119

The following algorithm is meant to output the sum of the first 10 odd numbers.

begin
    set count to 1
    set sum to 0
    repeat
        add count to sum
        add 2 to count
    until count >10
    output sum
end

(d) Discuss the algorithm's effectiveness and suggest how it could be amended.

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_____ [6]

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24SDT1120

(e) Explain inheritance as used in object-oriented programming.

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