



Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2023

Centre Number

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Candidate Number

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Digital Technology

Assessment Unit AS 1

assessing

Approaches to
System Development



[SDT11]

SDT11

TUESDAY 16 MAY, 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 six** 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 **3(a)**, **5(a)(ii)** and **6(d)**.

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24SDT1101

1 (a) One of the roles of a programmer is to produce source code.

Describe two other roles carried out by a programmer.

1. _____

2. _____

_____ [4]

(b) The systems analyst organises fact-finding.

Identify three methods of fact-finding.

1. _____

2. _____

3. _____ [3]



(c) Some of the user requirements for a proposed stock control system are shown below.

ID	User requirement
R40	Queries will be completed within an agreed time
R43	RFID technology will be used to record stock movements
R55	Stock breakages will be entered manually
R61	Backups to be performed at hourly intervals

Each requirement is either functional (F) or non-functional (NF).

Complete the following table.

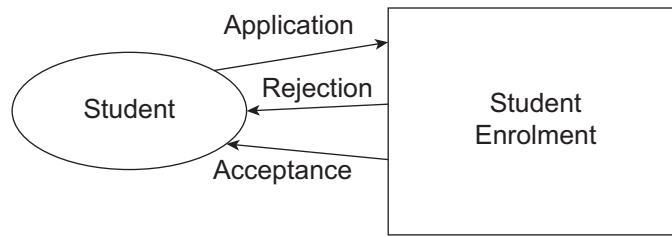
ID	F or NF?	Reason
R40		
R43		
R55		
R61		

[8]

[Turn over



2 (a) The context data flow diagram (DFD) for a student enrolment system is shown below.



When a student applies for a course, the application is processed as follows:

- The course file is checked to see if there is a place available on the course
- If no place is available, the student is sent a rejection letter
- If a place is available, the student is enrolled on the course and sent an acceptance letter, and the course file and student file updated

Produce a level 1 DFD for the Student Enrolment system.

[10]



(b) Describe how each of the following is used during systems development.

Storyboarding

Prototyping

[6]



Corrective maintenance is one type of software maintenance.

- (ii) Identify two of the components of technical documentation and state how each can be used during corrective maintenance.

Component 1 _____

How used _____

Component 2 _____

How used _____

[4]



(iii) Name and describe two other types of software maintenance.

Name 1 _____

Description _____

Name 2 _____

Description _____

[6]





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(Questions continue overleaf)

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[Turn over



24SDT1109

4 (a) Data conversion may have to be carried out during the implementation of a new system.

(i) Explain what is meant by data conversion.

[2]

(ii) Explain how data conversion will be carried out when a manual information system is replaced by a computerised system.

[4]



(b) A new computer system undergoes different types of testing.

(i) Explain what is meant by system testing.

[3]

(ii) Describe how the end users will be involved in acceptance testing.

[3]

[Turn over



5 (a) Software systems can be developed in a number of different ways.

(i) Describe the main features of the Agile approach.

[3]



(b) Two of the main elements in organising a software project are constraints and risks.

(i) Identify the other main element.

_____ [1]

(ii) Explain, with the aid of an example, what is meant by each of the following.

A constraint

A risk

_____ [4]



(iii) Describe how a project manager can use a Gantt chart to manage a software project.

[4]



6 (a) An integrated development environment (IDE) enables a programmer to key in and run a computer program.

Identify three other features of a typical IDE.

1. _____

2. _____

3. _____

[3]



(b) Explain the following programming terms.

Syntax

Variable

[4]



(c) The following algorithm was intended to input a list of positive numbers and output the largest and smallest values. A dummy value of **-999** indicates the end of the list.

```
begin  
  max = 0  
  min = 0  
  input number  
  repeat  
    if number < min  
    then  
      min = number  
    end if  
    if number > max  
    then  
      max = number  
    end if  
    output min  
    output max  
    input number  
  until number = -999  
end
```

Identify the two logical errors in the algorithm and explain how each can be corrected.

Error 1

Correction





Error 2

Correction

[6]





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Question Number	Marks
1	
2	
3	
4	
5	
6	

Total Marks	
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Examiner Number

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