



Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2019

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 21 MAY, 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 **3(a)(ii)** and **3(b)**.



- 1 (a) A computer system includes a user interface and it can carry out a number of processes.

Explain each of the following terms.

User interface

Process

[4]

- (b) During systems development, programmers are responsible for writing the source code.

- (i) Define the term source code.

[2]



(ii) Describe three other responsibilities of programmers during systems development.

1. _____

2. _____

3. _____

_____ [6]



(c) Describe the main features of the following methods of fact-finding.

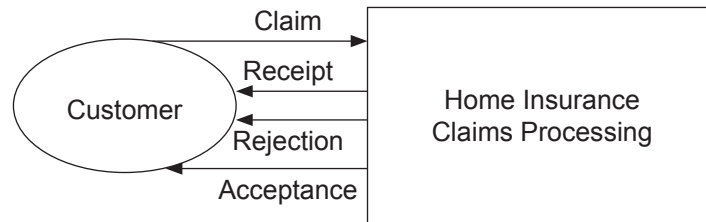
Observation

Interviews

[6]



(d) The following context level Data Flow Diagram (DFD) shows how home insurance claims are processed.



Each claim is processed as follows:

- The claim is logged and a receipt sent to the customer
- The claim is reviewed and is accepted or rejected

Details of claims are held in the Claims file.

In the box below, produce a level 1 DFD for this system as described above.

[6]

[Turn over



- 2 (a) Explain the purpose of each of the following stages in creating a new computer system.

Design

Development

[4]

- (b) Describe how storyboarding can be used in the design of a computer system.

[4]



(c) Testing ensures the quality of a computer system.

(i) Identify two ways in which the suitability of a computer system can be measured.

1. _____

2. _____

_____ [2]

(ii) Identify two ways in which the usability of a computer system can be measured.

1. _____

2. _____

_____ [2]



(iii) Explain what is meant by each of the following.

Alpha testing _____

Beta testing _____

[6]



(d) A computer system requires software maintenance to ensure it complies with new legislation.

(i) Name and describe this type of maintenance.

Name _____

Description _____

_____ [4]

(ii) Identify two components of technical documentation and state how each will be used during software maintenance.

Component _____

How used _____

Component _____

How used _____

_____ [6]

[Turn over



4 (a) A program written in a high level language can be translated using an interpreter or a compiler.

(i) Explain two differences between an interpreter and a compiler.

1. _____

2. _____

_____ [4]

(ii) State one advantage of using an interpreter instead of a compiler.

_____ [1]

(iii) State one advantage of using a compiler instead of an interpreter.

_____ [1]



(b) Describe each of the following data types.

Character

String

Boolean

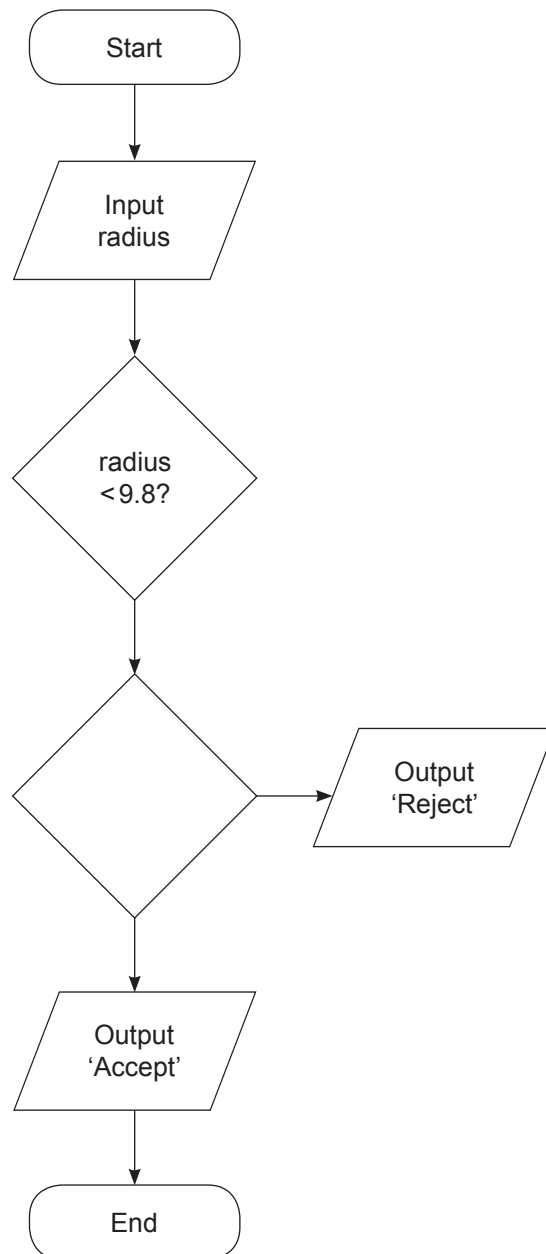
[6]

[Turn over



(c) In a factory, a machine part is accepted if its radius is between **9.8 mm** and **10.2 mm** (inclusive of both values), otherwise it is rejected.

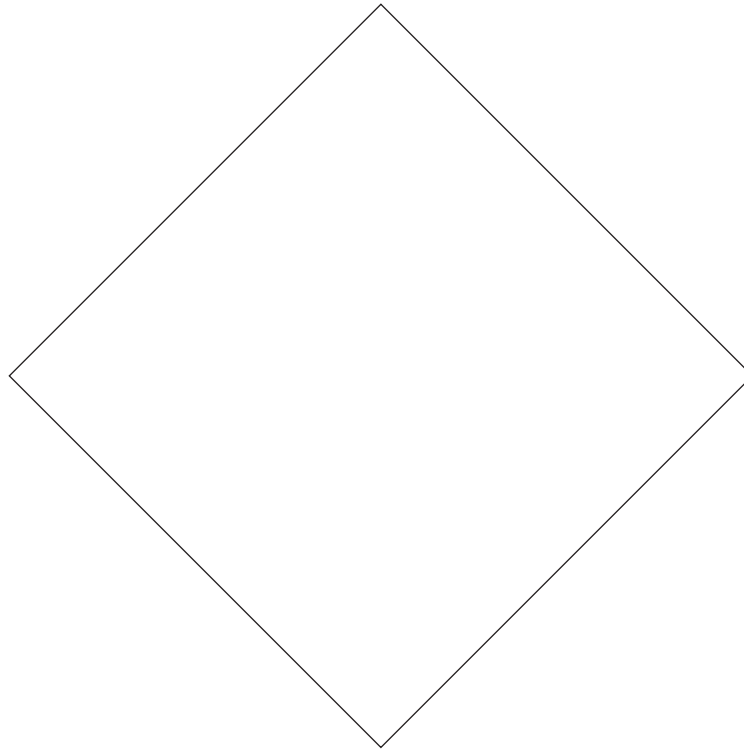
Complete the following flowchart to describe this process.



[6]



(d) By completing the decision box below, show how the two decisions in the flowchart in part (c) could be replaced by a single decision.

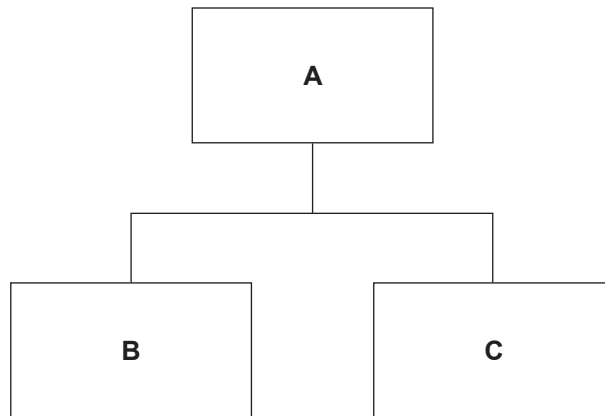


[2]

[Turn over



5 The following diagram shows how three classes are related by inheritance.



(a) By referring to the diagram, explain each of the following terms.

Base class

Derived class

[4]



(b) Explain how each of the following is implemented in a class in an object-oriented program.

An attribute

A behaviour

[4]



(c) Describe two benefits of inheritance.

1. _____

2. _____

[6]





THIS IS THE END OF THE QUESTION PAPER

12018



20SDT1119

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

Total Marks	
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Examiner Number

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