

Candidates answer on the question paper
Additional materials: No additional materials are required



Candidate Forename

Candidate Surname

Centre Number

Candidate Number

INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- Write your answer to each question in the space provided.
- Additional answer space is available on the lined pages at the back of this booklet. Answers on these pages **must** be clearly numbered.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **90** of which 4 marks are allocated to the assessment of the quality of written communication.
- No marks will be awarded for using brand names of software packages or hardware.

FOR EXAMINER'S USE	
1	
2	
3	
4	
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6	
QWC	
TOTAL	

This document consists of **12** printed pages and **4** lined pages.

Alan has bought a number of shoe shops over the last few years. Each shop has its own computer systems for keeping records of stock, accounting and correspondence. All these computers are stand-alone machines and use different software and hardware.

Alan is now considering upgrading all these computer systems and has decided to appoint an analyst/programmer to help in this process. He intends to advertise this post and interview the applicants.

1 You are to assume you are one of the applicants and have been asked the following questions.

(a) State the meaning of the terms hardware and software.

Hardware

.....

Software

.....[2]

(b) State **two** input and **two** output devices that may be used when selling a pair of shoes. State the purpose of each.

Input device 1

Purpose

.....

Input device 2

Purpose

.....

Output device 1

Purpose

.....

Output device 2

Purpose

.....[8]

- (ii) With the aid of diagrams, explain how an item can be removed from the list when a pair of shoes is entered in error.

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.....[3]

The master stock file at each shop is held as a sequential file in order of the primary key of each pair of shoes.

- (iii) State why the linked list is suitable for updating the master stock file.

.....

.....[1]

2 Alan has appointed Barbara as an analyst/programmer. Barbara has been given the task of updating all the computer facilities. She believes that each shop should have its own LAN.

(a) (i) State the meaning of the term LAN.

.....
.....[1]

(ii) Give **two** advantages and **one** disadvantage of using a LAN.

Advantage 1
.....

Advantage 2
.....

Disadvantage
.....[3]

(iii) Barbara has decided that all the shops should be linked using a WAN.

State the meaning of the term WAN.

.....
.....[1]

(b) Barbara wants to use a distributed database for stock control.

(i) State what is meant by a distributed database.

.....
.....[1]

(ii) Give **two** advantages and **two** disadvantages of a distributed database.

Advantage 1
.....

Advantage 2
.....

Disadvantage 1
.....

Disadvantage 2 [4]

(c) Some shops have few computers to network and others have many computers to network. Barbara has decided to use both hubs and switches.

(i) Hubs use half-duplex transmission.

State the meaning of half-duplex and explain why a hub is a half-duplex device.

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.....[3]

(ii) Switches use full-duplex transmission.

State the meaning of full-duplex and explain why a switch is a full-duplex device.

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.....[3]

3 At the moment, some shops use flat files and others use a relational database to hold details of stock and suppliers.

(a) Describe the meaning of

a flat file
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.....
.....[3]

a relational database
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.....[4]

(b) Suppliers provide many different styles of shoe but each style is from only one supplier.

(i) Draw an entity-relationship (E–R) diagram to represent this.

(ii) Define tables to match your E–R diagram and identify any primary and foreign keys.

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.....[5]

(c) Give **three** advantages of using a relational database rather than flat files.

Advantage 1
.....
Advantage 2.....
.....
Advantage 3.....
.....[3]

(d) Explain why a manager of a shop should have different access rights to the database than a shop assistant.

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.....[3]

4 The distributed database is to be used for:

- updating stock levels as soon as shoes are sold;
- printing reports giving monthly statistics of sales in each shop.

For each of these, state the type of response time required and the implications this will have for hardware and software.

Updating stock levels

Response time

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Hardware

.....

Software

.....[3]

Printing reports

Response time

.....

Hardware

.....

Software

.....[3]

