

SECTION A

Answer ALL the questions in this section.

1. Edexcelsior Supermarket issues new checkout operators with this information:

When a barcode is scanned, the product is identified by our computer. The computer then displays the product price and the name of the product. At the same time the computer updates the stock level for the product.

(a) Explain why the barcode does not include the price of the product.

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(1)

(b) The computer has a direct link to the supermarket's stock control system.

Explain how this system can help to prevent the supermarket from running out of stock.

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(3)

(c) The stock is counted by the staff once a month. The amount of stock counted does not always match that shown by the computer.

Give **three** reasons why this happens.

Reason 1

Reason 2

Reason 3

(3)

(Total 7 marks)

Q1



2. Data entry clerks sometimes use speech recognition systems to enter text into a computer.

(a) (i) State a suitable input device for a speech recognition system.

..... (1)

(ii) Describe what the speech recognition software does.

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..... (2)

(b) Data entry clerks can also use a keyboard to enter text into a computer.

Describe a third method of entering text into a computer.

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..... (2)

(Total 5 marks)

Q2



3. A doctors' practice uses a local area network (LAN). The practice has four doctors and each doctor has a computer and printer. These are used to access patients' records and to print prescriptions.

The network file server is located in the practice manager's office.

(a) State **two** benefits of using this network instead of stand-alone computers.

Benefit 1

Benefit 2

(2)

(b) Explain the role of the network file server.

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(2)

The local hospital also uses a network. The doctors would like to link the practice network to the hospital network so that patient information can be easily transferred.

(c) (i) Give an additional device that would be required to link the two networks.

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(1)

(ii) Describe the function of this device.

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(2)

(Total 7 marks)

Q3



4. A software manufacturer has the following vacancies:

- Software Engineer
- Systems Analyst
- Programmer

Describe the roles and responsibilities of a:

Software Engineer

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(3)

Systems Analyst

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(3)

Programmer

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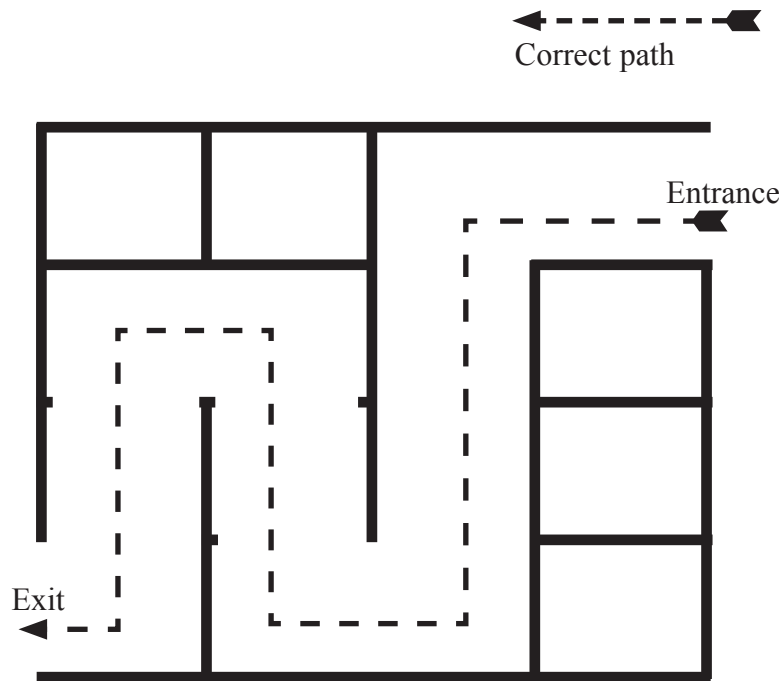
(3)

(Total 9 marks)

Q4



5. The diagram shows the path through a maze.



A computerised robot is placed at the entrance to the maze. The first time this happens, the robot uses trial and error to find the correct path to the exit.

(a) State **two** different sensors that could be used by the robot to enable it to find the correct path to the exit.

Sensor 1

Sensor 2

(2)

(b) Explain the part feedback plays in enabling the robot to determine the correct path to the exit.

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(3)



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When the same robot is again placed at the entrance of the maze it travels to the exit following the correct path.

(c) Explain how the robot is now able to follow the correct path to the exit.

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(3)

Q5

(Total 8 marks)

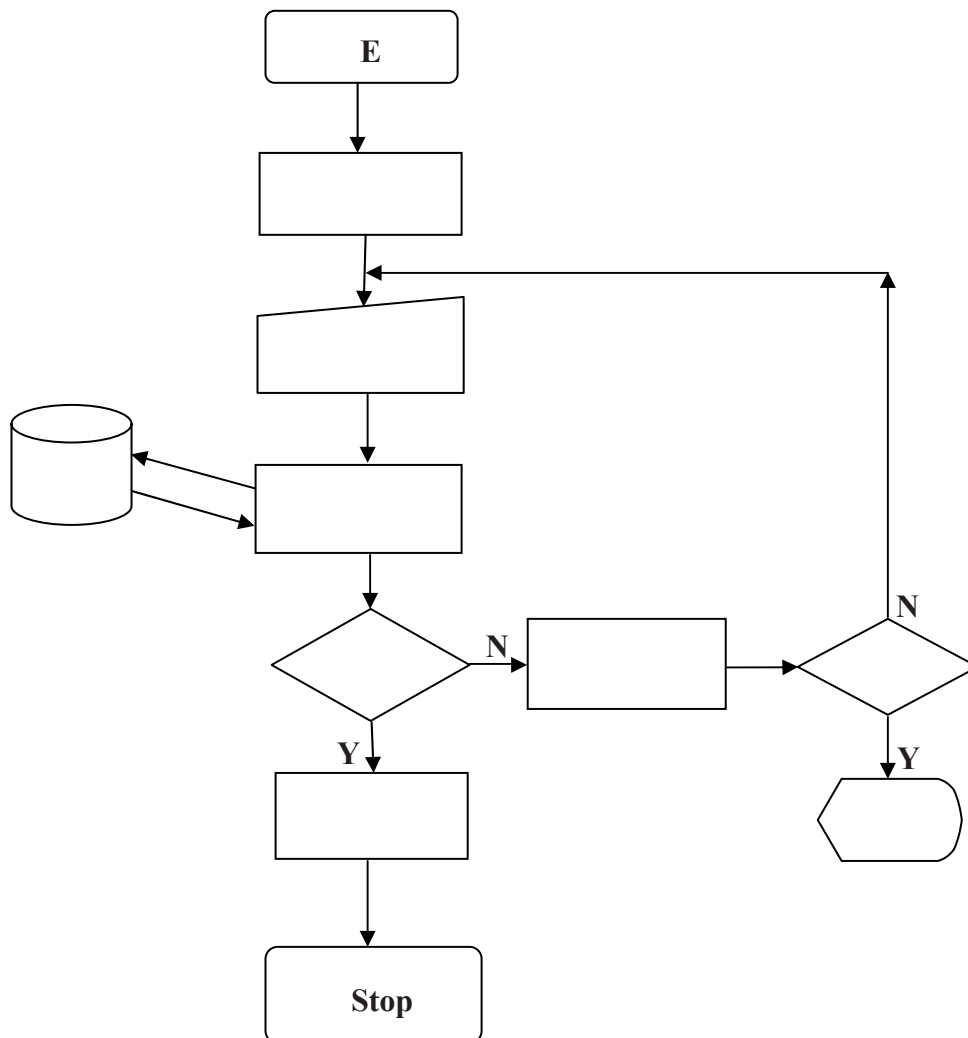


6. An organisation uses multi-access databases. Users are issued with passwords to ensure that there is no unauthorised access to the databases.

(a) A user is allowed three attempts to enter a correct password. If the password is incorrect after the third attempt an error message is displayed.

(i) Enter the letters A B C etc into the flow chart to describe this process. Use each item from the list. The first one has been done for you.

- A. Search the password database
- B. Display error message
- C. Add 1 to counter
- D. Password correct?
- E. Start
- F. Counter = 3?
- G. Set counter to zero
- H. Enter password
- I. Allow access



(6)



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(ii) For passwords to be secure they should be changed regularly.

Give **two** other rules to ensure that passwords are secure.

Rule 1

Rule 2

(2)

(b) When a member of staff makes an alteration to a database the transaction log is updated.

Explain the purpose of a transaction log.

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(2)

Q6

(Total 10 marks)



7. A company runs a manual information system for ordering products, tracking all materials sold, and processing customer accounts. The manager has decided to computerise all manual systems.

(a) The computerised system must be protected from threats by people who work for the company and by those who do not. Data deletion and data theft are possible threats. State **two** other possible threats to an information system.

Threat 1

Threat 2

(2)

(b) Describe the steps that the company could take to prevent each of the **two** threats you have identified.

Prevent threat 1

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Prevent threat 2

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(2)

(Total 4 marks)

Q7

TOTAL FOR SECTION A: 50 MARKS



SECTION B

The questions in this section refer to the case study.

A copy of the case study can be found as an insert.

Answer ALL the questions in this section.

8. The following table shows incomplete details for fields in the database.

Assume that Hilary has chosen solution 2 that has a separate field for each genre and instrument.

Complete the table to show the data type and field length. Give a reason for each of your answers. The first has been completed for you.

Field name	Data type	Field length	Reason
Title	text		No title example is given but titles are usually words, so need a text field.
		30	30 characters would be enough to identify title even if it is longer.
Music book			
Words			
ID			

(Total 12 marks)

Q8

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9. (a) The contents of a database may be altered by adding, deleting, or amending a record.

Give an example of each type of alteration for the music database.

Adding

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Deleting

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Amending

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(3)

Solution 1 has the genre and instrument fields as Memo fields that can each hold 100 characters of text.

Solution 2 has a separate field for each genre and instrument.

Solution 3 has a four-table database.

(b) Explain why solutions 2 and 3 would be better than solution 1.

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(2)



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blank

(c) Give **two** reasons why solution 2 would be better than solution 3 for an **O Level project**.

Explain your answer in each case.

Reason 1

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Reason 2

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(4)

Q9

(Total 9 marks)

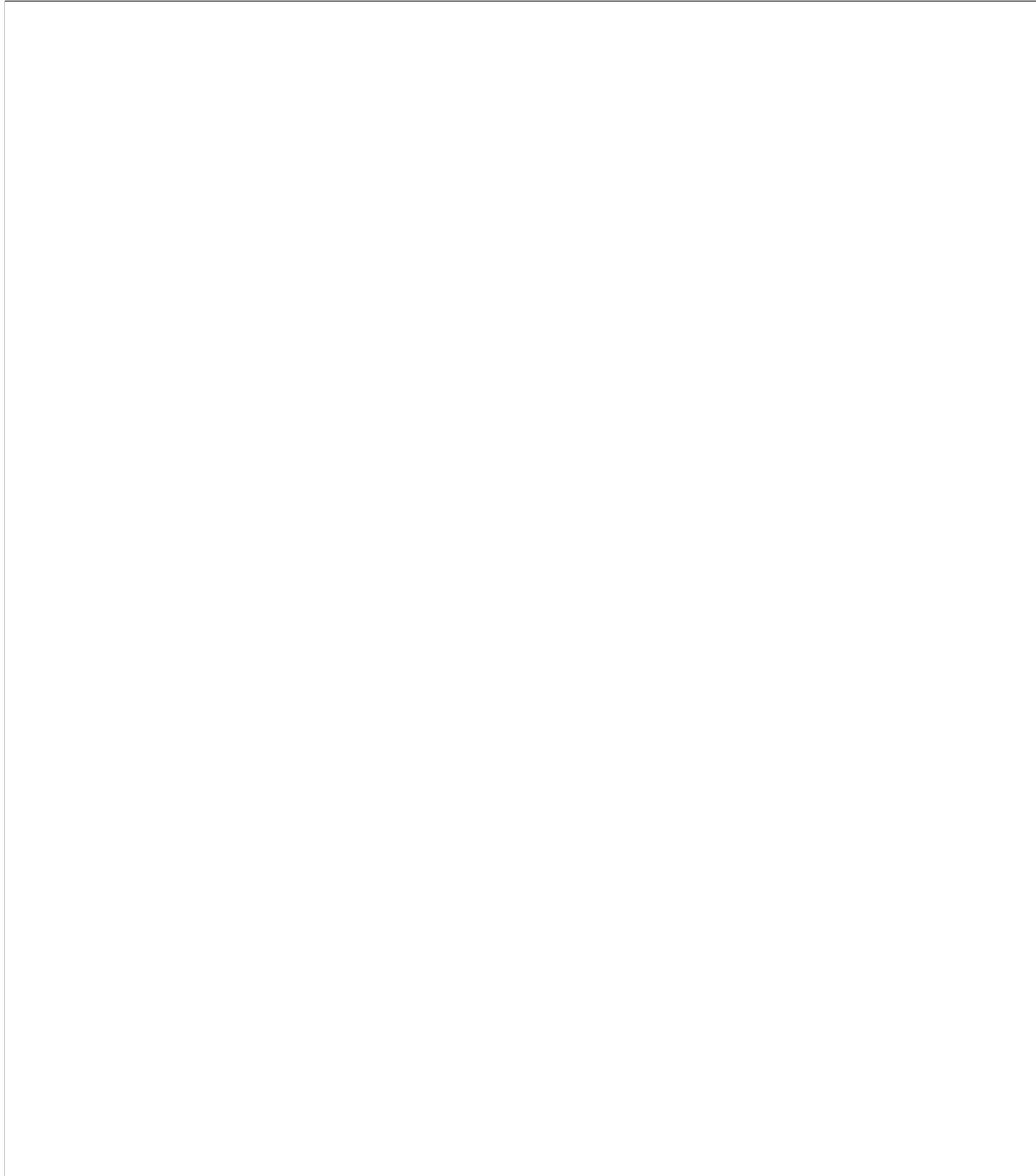


10. Hilary created a two-table database for Mr. Raymond to evaluate. The database has:

- a MUSIC table containing the fields title and ID
- a DETAILS table containing the fields ID, music book, words and separate fields for each genre and instrument.

Mr. Raymond wanted the system to be easy to use.

Use the box below to design a suitable, user friendly input screen for this application.



Q10

(Total 6 marks)



11. Mr. Raymond asked Hilary to write a user guide for the database. One of the items that she included in the guide was ‘how to search the database’.

(a) State **four** other items that should be included in the guide.

Item 1

Item 2

Item 3

Item 4

(4)

(b) When explaining how to search the database, Hilary used an example. The example was to find titles of classical music suitable for both the violin and the viola.

She described the process as a series of instructions.

Write down the instructions for the user guide.

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(5)

(Total 9 marks)

Q11



12. Mr. Raymond asked Hilary if she could make two changes to the database because he wanted to be able to:

- search for music by composer
- open the electronic documents from the database.

(a) Describe the change that Hilary would make to search by composer.

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(3)

(b) Hilary suggested having the documents on a web site.

Describe the change that Hilary would make to open a web site from the database.

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(3)

(Total 6 marks)

Q12



13. Mr. Raymond is delighted with the new system and wants to make the music database and the documents on the web site available to students via the Bankside College intranet. The requirements are:

- music students must be able to see the documents and search the database but must not be able to change anything
- non-music students must be able to see the documents but not be able to access the database
- Mr. Raymond must be able to see the documents, search the database and make changes to either.

Explain how this could be implemented for:

(a) the documents

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(3)

(b) the database

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(5)

(Total 8 marks)

Q13

TOTAL FOR SECTION B: 50 MARKS

TOTAL FOR PAPER: 100 MARKS

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