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SECTION A

Answer ALL questions in this section.

1. Copying software could be a breach of software copyright.

(a) Explain the purpose of software copyright.

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(2)

A company employs keyboard operators who use copyrighted word processing software on stand-alone desktop computers.

(b) State the steps that the company should take to avoid breaching the copyright of the word processing program.

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(3)

Q1

(Total 5 marks)



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2. A college has a network computer used for management purposes. Only a few people are allowed access to the network.

(a) State **two** methods to prevent unauthorised access to the network.

1.

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2.

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(2)

People who are authorised to access the network might not be allowed access to all management data.

(b) Describe a method to restrict their access to the data.

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(2)

Q2

(Total 4 marks)



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3. *E-shoppers.com* is a company that sells goods to the public using the Internet. Customers use an on-line catalogue to choose the items that they wish to buy. Customers who are using *E-shoppers.com* for the first time, have to register with the company. They register by completing an on-line form.

(a) Design an on-line form to capture the customer's name and address and details about how the customer will pay for the goods.

(6)



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(b) *E-Shoppers.com* employed a software engineer to develop the system. Outline the responsibilities of the software engineer.

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(4)

(c) *E.Shoppers.com* network manager is concerned about computer crime.

(i) Give an example of computer crime that the manager might be concerned about.

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(1)

(ii) Explain how the manager could prevent this crime.

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(2)

(Total 13 marks)

Q3

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4. A hospital has a local area network that links all the departments in the hospital.

(a) (i) State what is meant by the term *local area network (LAN)*.

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(1)

(ii) State for what purpose the LAN might be used by a hospital doctor.

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(1)

The hospital is linked to other hospitals in the region by a wide area network.

(b) (i) State what is meant by the term *wide area network (WAN)*.

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(1)

(ii) State for what purpose the WAN might be used by a hospital doctor.

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(1)

The hospital also uses an intranet for some tasks.

(c) (i) State what is meant by the term *intranet*.

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(1)

(ii) State for what purpose a hospital might use the intranet.

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(3)

(Total 8 marks)

Q4



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5. A computer system is developed in five separate stages. Two of the stages in the development are **analysis** and **implementation**.

(a) List **three** other stages.

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(3)

(b) Explain how an analyst would specify the problem at the analysis stage.

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(3)

During the **Implementation** stage the hardware will be installed and tested.

(c) State **three** further tasks to be completed in the implementation stage.

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(3)

(Total 9 marks)

Q5

7

Turn over



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6. A football ground has 25000 numbered seats. During the season, supporters can buy tickets for matches at one of five ticket offices. The ticket offices are linked to a central computer that keeps a record of ticket sales. Each ticket office has a display that shows which seats have not yet been sold.

Two supporters arrive at different ticket offices. At exactly the same time, they both try to book seat 300 for next Saturday's match.

(a) Explain how the booking system prevents seat 300 being booked by both supporters.

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(3)

Supporters of the club are given a plastic card. The plastic card carries information that can be scanned into a computer. Supporters who attend more than five matches in a season are given a discount when they book for additional matches.

(b) (i) Explain how a supporter's information could be held on the card.

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(1)

(ii) Explain how this information is used to give the discount.

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(2)

(Total 6 marks)

Q6



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7. Computers that have additional specialised equipment attached are used to monitor patients in hospital. This process is a form of data logging.

(a) Give a specific example of this kind of data logging.

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(1)

(b) State what additional specialised equipment is needed in this case.

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(1)

(c) Draw a labelled diagram showing the main parts of the system.

(3)

Q7

(Total 5 marks)

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. Rakhee and Verna interviewed the Head of P.E. and did some other research.
Three other research methods that could be used are:

- questionnaires
- inspection of documents
- observation.

(a) (i) State which of these research methods is the most suitable for this application.

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(1)

(ii) Explain why the other two methods are less suitable.

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(2)

(b) State **three** pieces of information which Rakhee and Verna need to obtain from this research.

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(3)

(Total 6 marks)

Q8



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9. The following table shows incomplete details for fields in the database. Complete the table to show the data type and field length. Give a reason for each of your answers.

Field name	Data type	Field length	Reason
pupilID	numeric	7	4 digits identify the year, 3 more digits allow for 999 pupils per year.
event name			
class			
place			
record			

(Total 12 marks)

Q9



11

Turn over

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10. In Rakhee's database project a calculation must be done to produce points from the place field.
Rakhee added a new field called points to the database and used a formula to put values into it.

(a) State a formula which would serve this purpose.

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(3)

(b) At the end of the competition, the P.E. staff want to obtain a report for class 1B from the database. The report must show a list of all pupils in the class who scored points. The list must have pupils' names in alphabetical order. Explain how this can be achieved.

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(4)

Q10

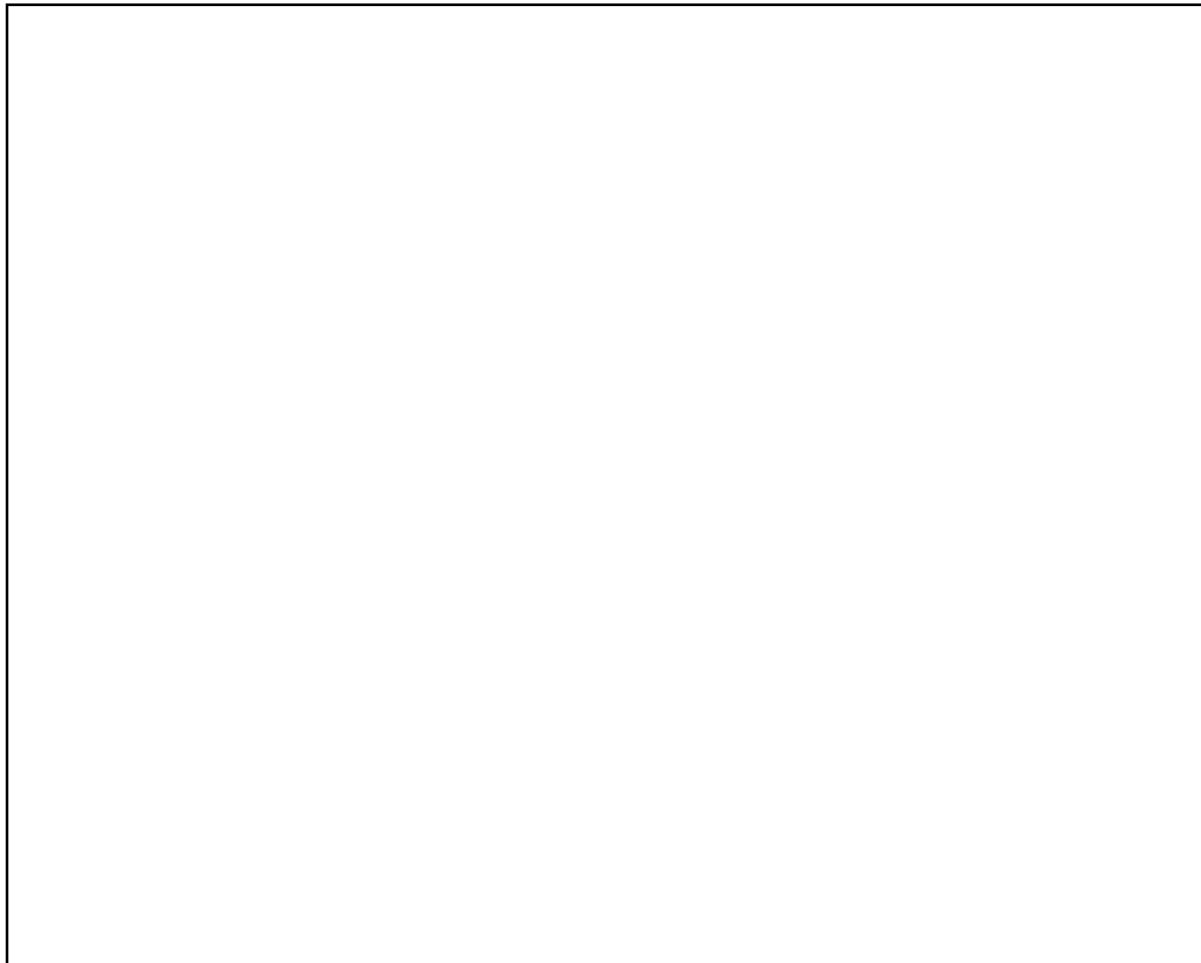
(Total 7 marks)



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11. In Verna's spreadsheet project each pupil has an X placed in the column of each event that the pupil has entered. The X is replaced by points if the pupil gains first, second or third place. The spreadsheet calculates each pupil's total points and calculates each class's total points.

- (a) In the box, sketch a design of the spreadsheet. Include only five pupils and five events. Do not write out functions or formulae but show where they would be placed and state what they would do.



(6)

- (b) Before the competition starts, the P.E. staff want the spreadsheet to show how many events each pupil has entered and to display a message if a pupil enters more than three.

State a suitable function for this purpose and explain how it would be used.

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(3)

Q11

(Total 9 marks)



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12. The database and spreadsheet described in the case study both offer different solutions to the problem.

(a) Describe **one** way in which the database gives a better solution than the spreadsheet.

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(2)

(b) Describe **one** way in which the spreadsheet gives a better solution than the database.

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(2)

Q12

(Total 4 marks)



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13. Races are started by firing a starting pistol and the Head of Science has decided to use the sound of the pistol to start the timing system. She is going to use an infrared beam and laptop computer to detect runners as they cross the finish line.

(a) Describe, with the aid of a diagram, how this system would give a time for the winner of a race.

(8)

(b) Although the system gave a correct time for the winner, it would sometimes give fewer times than there were runners across the finish line. State a reason for this and suggest changes to solve the problem.

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(4)

Q13

(Total 12 marks)

TOTAL FOR SECTION B: 50 MARKS

TOTAL FOR PAPER: 100 MARKS

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