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London Examinations IGCSE

Information and Communication Technology (4385)

First examination May 2005

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Specimen Papers and Mark Schemes

London Examinations IGCSE

Information and Communication Technology (4385)

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Contents

Specimen Papers

Mark Schemes

| Centre No. | | | | | | Paper Reference (complete below) | Surname | Initial(s) |
| Candidate No. | | | | | | **4 3 8 5 / 1 F** | Signature | |

Paper Reference(s)

4385/1F

London Examinations IGCSE

Information and Communication Technology

Paper 1F

Foundation Tier

Specimen Paper

Time: 1½ hours

Materials required for examination	**Items included with question papers**
None	None

Question Number	Leave Blank
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
Total	

Instructions to Candidates

In the boxes above, write your centre number and candidate number, your surname, initial(s) and signature.
The paper reference is shown at the top of this page. Check that you have the correct question paper.
Answer **ALL** the questions in the spaces provided in this question paper.
Dictionaries may **not** be used in this examination.

Information for Candidates

There are 18 pages in this question paper. All blank pages are indicated.
The total mark for this paper is 100. The marks for the various parts of questions are shown in round brackets, e.g. **(2)**.

Advice to Candidates

You are reminded of the importance of clear English and careful presentation in your answers.
Include diagrams in your answers where these are helpful.

Turn over

Answer ALL questions.

1.   A company uses a CAD package to design houses.
(a)   State what the letters CAD stand for.

        ....…....……

        (1)

(b)   Explain **two** ways in which CAD might benefit the company.

        1..

        ....

        2..

        ....…......

        (2)

(c)   Give **three** other types of application software which the company could use.

        1..

        2..

        3..

        (3)

                                        Total for Question 1: 6 marks

2.　　　User interfaces may be command line or GUI.

(a)　　　State what the letters GUI stand for.

　　　..

　　　　　　　(1)

(b)　　　Give **one** advantage of a GUI over a command line interface.

　　　..

　　　..

　　　　　　　(1)

(c)　　　A GUI uses windows, icons, menus and pointers.

　　　State what each of these is and give an example of its use.

　　　windows..

　　　...

　　　icons...

　　　..

　　　menus..

　　　..

　　　pointers..

　　　..

　　　　　　　(8)

Total for Question 2: 10 marks

Turn over

3. Every office in an office block is connected to a computer system. It controls the air-conditioning.

(a) (i) State one measurement that the system will need to make.

....

(1)

(ii) Name the sensor it would use.

....

(1)

(b) Explain how the air-conditioning uses a feedback loop.

....

....

....

....

....

....

(3)

(c) The central computer system also controls electronic locks on the office doors. Explain **two** methods which workers could use to unlock their doors.

1..

....

....

2..

....

....

(4)

Total for Question 3: 9 marks

4. An hotel uses a database to keep details of room reservations.
    This is the ROOMS table.

Room Number	Customer name	Number of guests	Home telephone	Deposit paid in £	Amount owing in £
621	Chan J	2	2587643	50	50
232	Khan S	4	2637876	100	150
865	Smith P	3	3128790	60	120
594	Hill P	2	4117843	50	50
588	Cohen M	2	2056656	50	100
632	Stone G	4	3990807	75	125

(a) Explain what a database **table** is.

....

....

(2)

(b) State **one** field which may be used as the **key field**.

....

(1)

(c) Explain why a key field is required.

....

....

(2)

Turn over

(d)   Describe what **data validation** is.

....

....

(2)

(e)   (i) State a data validation check for the **Home telephone** field.

....

(1)

       (ii) Explain how this check would work.

....

(1)

(f)   (i) The database is searched to find which rooms have more than 2 guests.

       List the **room numbers** found by the search.

       ....…

(1)

       (ii) The database is searched again to find which rooms have more than 2 guests
       AND a deposit of less than £100 has been paid.

       List the **customer names** found.

       ....

(1)

(g)   The database is searched for STONE G. The database returns the message
        'NO RECORDS FOUND'.

        Explain why this might happen.

        ....…..........

        ....…......

        ....…......…

        ....…......

                                                                                                                (2)

                                            Total for Question 4: 13 marks

                                                                                                          Turn over

5.   A ticket agency sells tickets for pop concerts. When a customer telephones to make a booking, the clerk has to do several things. They are listed here **but are not in the correct order.**

A. A clerk writes down the customer's details.
B. The clerk decides if there are suitable seats.
C. The clerk searches for vacant seats.
D. The clerk enters the customer's details.
E. The clerk books the seats.
F. The clerk closes the database file.
G. The clerk opens the correct database file.
H. If there are no seats the clerk refers back to the customer.
I. The tickets are printed.

(a)   Use the letters **B to I** to complete the flowchart. The first box has been done for you.

(8)
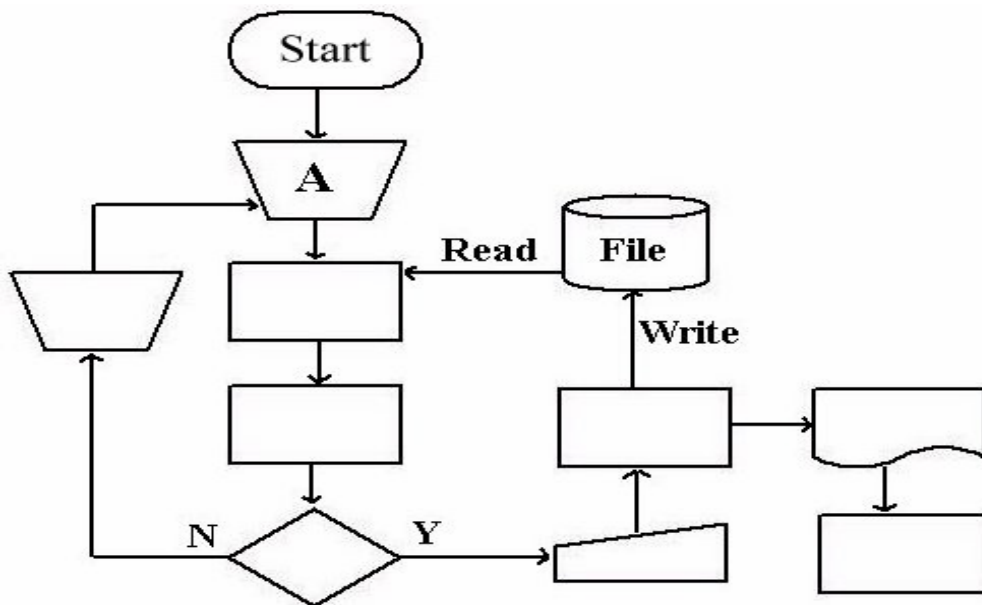
(b)   At **step D** the following details are needed

- name
- address
- telephone number
- credit card number.

Design a screen form in the box below to capture this data.

(4)

Total for Question 5: 12 marks

Turn over

6. Employees such as data input staff, who use computers for long periods each day, are in danger of damaging their health.

(a) State **two** damaging effects that might arise from the extensive use of computers at work.

1 ....

....…..........

2 ....

....…........

(2)

(b) For each of these effects, state **one** measure that the employer could take to reduce the risk of damage to employees.

1..

....

2 ....

....

(2)

Total for Question 6: 4 marks

7.   A clothing company uses the Internet to sell its products directly to customers.

(a)   A customer connects to the Internet. State **four** further steps, in the correct order, that the customer would have to follow to buy the company's products.

1..

2..

3..

4..

                                                                                        (4)

(b)   Explain why some people might not want to buy their clothing over the Internet.

....

....

....

                                                                                        (2)

Total for Question 7: 6 marks

Turn over

8.   A college issues each of its students with a plastic card that can be used to identify the student. Whenever the student purchases books, equipment or meals within the college, the plastic card is passed through a card reader and details of the transaction are stored on a central computer.

(a) Suggest **two** other uses for such a card within the college.

1...

....…...............

2...

....…........

(2)

(b) Describe **two** ways in which data can be held on the card so that it can be read by a card reader.

1...

....

2...

....

(2)

(c) Unless certain security measures are taken, the cards could be misused by students.

(i)   Explain how students might misuse the cards.

....

....

....

(2)

(ii)   State a security measure that could be taken to prevent such misuse.

....

....

(1)

(iii)   Explain how that security measure would prevent such misuse.

....

....

(1)

Total for Question 8: 8 marks

Turn over

9. A computing company has several PCs attached to a network in an office building. The manager would like to add Internet access for all of the PCs.

(a) (i) State **two** items of hardware that would be needed to connect the network of PCs to the Internet.

1..………..

2...

(2)

(ii) State **one** item of software that would be needed to connect to the Internet.

....

(1)

(b) State **two** benefits to the company of having Internet access.

1...

....…..

2..

....…

(2)

(c) The manager is concerned that employees might access inappropriate material on the Internet. Explain how this could be prevented.

....

....

....

(2)

Total for Question 9: 7 marks

10. The management of a factory keeps confidential data about its employees in a database. The management must ensure that the data being stored is secure, correct and up-to-date.

a) Explain what is meant by **secure** in this context.

....

....

(1)

b) State **two** ways to keep the data **secure**.

1 ....

2 ....

(2)

c) Describe a way of checking that the data in the database is **correct** and **up-to-date**.

....

....

....

(2)

d) Databases can be updated by **amending**, **adding** or **deleting** records. Give a reason why employee records would be **amended**, **added to** or **deleted.**

Amend...………

....………....

Add..……

....

Delete...

....

(3)

Total for Question 10: 8 marks

Turn over

11. A computer is used to monitor the condition of patients in a hospital.
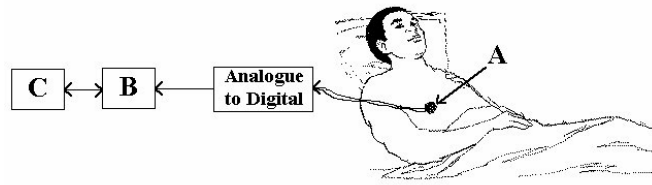
(a) (i) State one thing which might be measured by this system.

....

(1)

(ii) State what sensor would be used.

....

(1)

(b) The diagram above represents the data logging system. Name parts A, B and C.

A..

B..

C..

(3)

Total for Question 11: 5 marks

12.   The managers of a large hotel chain use both local area networks (LAN) and a wide area network (WAN) to help run the business.

(a)   Give **three** differences between a LAN and a WAN.

1..

....

2..

....

3..

....

(6)

(b)   Each hotel has its own LAN which guests can access from their rooms. The LAN gives the guests facilities such as looking up local bus services or booking a meal in the hotel restaurant. State two other facilities which access to the LAN may offer.

1..

....

2..

....…..

(2)

(c)   Each hotel has a bookings database which is backed up overnight.

(i) Describe a suitable system to perform this backup.

....

....

....

....

(2)

Turn over

(ii) Describe how the files could be recovered if the system fails at midday.

....…..........

....

....

....

(2)

Total for Question 12: 12 marks

TOTAL FOR PAPER: 100 MARKS

E N D

Centre No.						Paper Reference (complete below)		Surname		Initial(s)
Candidate No.						**4 3 8 5 / 2 H**		Signature		

London Examinations IGCSE

Information and Communication Technology

Paper 2H

Higher Tier

Specimen Paper

Time: 1½ hours

Examiner's use only

Team Leader's use only

Question Number	Leave Blank
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
Total	

Materials required for examination
None

Items included with question papers
None

Instructions to Candidates

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The paper reference is shown at the top of this page. Check that you have the correct question paper.
Answer **ALL** the questions in the spaces provided in this question paper.
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Information for Candidates

There are 17 pages in this question paper. All blank pages are indicated.
The total mark for this paper is 100. The marks for the various parts of questions are shown in round brackets, e.g.: **(2)**.

Advice to Candidates

You are reminded of the importance of clear English and careful presentation in your answers.
Include diagrams in your answers where these are helpful.

Turn over

1.   Employees such as data input staff, who use computers for long periods each day, are in danger of damaging their health.

(a)   State **two** damaging effects that might arise from the extensive use of computers at work.

1 ....

....

2 ....

....

(2)

(b)   For each of these effects, state **one** measure that the employer could take to reduce the risk of damage to employees.

1 ....

....

2 ....

....

(2)

Total for Question 1: 4 marks

2.   A clothing company uses the Internet to sell its products directly to customers.

(a)   A customer connects to the Internet. State **four** further steps, in the correct order, that the customer would have to follow to buy the company's products.

1..

2..

3..

4..

(4)

(b)   Explain why some people might not want to buy their clothing over the Internet.

....

....

....…

(2)

Total for Question 2: 6 marks

3.   A college issues each of its students with a plastic card that can be used to identify the student. Whenever the student purchases books, equipment or meals within the college, the plastic card is passed through a card reader and details of the transaction are stored on a central computer.

(a)   Suggest **two** other uses for such a card within the college.

1 ....

....…......

2 ....

....

(2)

(b)   Describe **two** ways in which data can be held on the card so that it can be read by a card reader.

1...…

....

2..

....

(2)

(c)   Unless certain security measures are taken, the cards could be misused by students.

(i)   Explain how students might misuse the cards.

....

....

....

(2)

(ii)   State a security measure that could be taken to prevent such misuse.

....

....

(1)

    (iii)   Explain how that security measure would prevent such misuse.

....

....

(1)

Total for Question 3: 8 marks

4.   A computing company has several PCs attached to a network in an office
       building. The manager would like to add Internet access for all of the PCs.

(a)   (i) State **two** items of hardware that would be needed to connect the network
       of PCs to the Internet.

       1...………..........

       2...

                                                                              (2)

       (ii) State **one** item of software that would be needed to connect to the Internet.

       ....

                                                                              (1)

(b)   State **two** benefits to the company of having Internet access.

       1 ....

       ....……..................

       2 ....

       ....……..................

                                                                              (2)

(c)   The manager is concerned that employees might access inappropriate material
       on the Internet. Explain how this could be prevented.

       ....

       ....

       ....

                                                                              (2)

                                        Total for Question 4: 7 marks

5. The management of a factory keeps confidential data about its employees in a database. The management must ensure that the data being stored is secure, correct and up-to-date.

(a) Explain what is meant by **secure** in this context.

....

....

(1)

(b) State **two** ways to keep the data **secure**.

1...

2...

(2)

(c) Describe a way of checking that the data in the database is **correct** and **up-to-date**.

....

....

....

(2)

(d) Databases can be updated by **amending**, **adding** or **deleting** records. Give a reason why employee records would be **amended**, **added to** or **deleted.**

Amend ....

....…........

Add ....

....

Delete ....…

....…

(3)

Total for Question 5: 8 marks

6. A computer is used to monitor the condition of patients in a hospital.

(a) (i) State one thing which might be measured by this system.

....

(1)

(ii) State what sensor would be used.

....

(1)

(b) The diagram below represents the data logging system. Name parts A, B and C.

A...……

B...…..

C...……

(3)
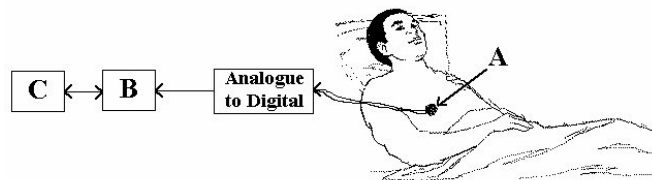
Total for Question 6: 5 marks

7. The managers of a large hotel chain use both local area networks (LAN) and a wide area network (WAN) to help run the business.

(a) Give **three** differences between a LAN and a WAN.

1...

....

2...

....

3...

....

(6)

(b) Each hotel has its own LAN which guests can access from their rooms. The LAN gives the guests facilities such as looking up local bus services or booking a meal in the hotel restaurant. State two other facilities which access to the LAN may offer.

1...

....

2...

....

(2)

(c) Each hotel has a bookings database which is backed up overnight.

(i) Describe a suitable system to perform this backup.

....

....

....

....

(2)

(ii) Describe how the files could be recovered if the system fails at midday.

....

....

....

....

(2)

Total for Question 7: 12 marks

8.   HomeDesign is a small company that designs houses for customers. At the moment the designs are drawn by hand, but HomeDesign intends to modernise by using a computer and appropriate software.

(a)   Suggest appropriate software for designing houses and give a reason for your choice.

Software..

Reason..

....

(2)

(b)   (i) Give **three** advantages to the company of using the modernised system instead of the present system.

1...

....

2...

....

3...

....

(ii) Give **one** advantage for the customer.

....

....

(4)

Total for Question 8: 6 marks

9.   A user interface may be command line driven or a GUI.

(a)   Describe **two** differences between a command line interface and a GUI.

1..

....

2..

....

(2)

(b)   Explain **two** features of a GUI which would help a physically handicapped person.

1..

....

....

2..

....

....

(4)

Total for Question 9: 6 marks

10. When a systems analyst is given a problem, the solution is developed in a number of stages. Two of the stages are **analysis** and **design**.

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

1 ....   2 ....   3 ....

(3)

(b) State **three** tasks that will be completed in the **analysis** stage.

1 ....

....

2 ....

....

3 ....

....

(3)

(c) As part of the **design** stage the systems analyst decides on a software package that will help to solve the problem. State **three** further tasks to be completed in the **design** stage.

1 ....

....

2 ....

....

3 ....

....

(3)

Total for Question 10: 9 marks

Specimen Papers and Mark Schemes – London Examinations IGCSE in Information and Communication Technology (4385)
Publication Code: UG013055. Issue 1, November 2003

31

11.   Every office in an office block is connected to a computer system that controls the air-conditioning.

(a)   State the input and output data for the air-conditioning system.

Input...

Output...

(2)

(b)   Explain how the system would be able to control the air-conditioning in each office.

....

....

....

....

....

....

(4)

(c)   The computer also assists with security in the office block. Describe **two** ways in which the computer could be used for this purpose. Your answers should give details of sensors and other equipment that would be required.

1...

....

....

2...

....

....

(4)

Total for Question 11: 10 marks

12. The Drive and Relax hotel chain has hotels in towns around the country. The reservations office uses a computer system which acts as a file server for a computer network which links all of the hotels. Reservation details are held in a database.

(a) Complete the table below which shows the fields in the CUSTOMER file of the database.

Field name	Field type	Field size
Customer reference number		
Customer name		
Number of guests		
Home telephone number		
Deposit paid		
Amount owing		

(3)

(b) Give reasons for your choice of **field type** and **field size** for

Customer reference number

....

....

Number of guests

....

....

Deposit paid

....

....

(3)

(c)   One day an hotel has only one room available for the night. Mr. Chan telephones the central reservation office to reserve a room at the hotel. At the same time, Mrs. Khan, who has not made a reservation, arrives at the hotel reception desk to request a room for the night.

   (i) Describe the unfortunate outcome that might result from these simultaneous enquiries.

   ....

   ....

   ....

   ....

   ....

(2)

   (ii)   Explain how this unfortunate outcome could be avoided.

   ....

   ....

   ....

   ....

   ....

   ....

   ....

   ....

(3)

Total for Question 12: 11 marks

13. A ticket agency sells tickets for pop concerts. When a customer telephones to make a booking, a number of steps take place:
The steps are not shown in the correct order.

    A.   A clerk writes down the customer's details.

    B.   The clerk decides if there are suitable seats.

    C.   The clerk searches for vacant seats.

    D.   The tickets are printed

    E.   The clerk books the seats.

    F.   The clerk closes the database table.

    G.   The clerk opens the correct database file.

    H.   If there are no seats the clerk refers back to the customer.

    I.   The tickets are printed

(a) In the space below, draw and label a flowchart which shows the booking process. The first box has been done for you.

(8)
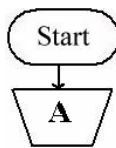
Total for Question 13: 8 marks

TOTAL FOR PAPER: 100 MARKS

E N D

Edexcel International

London Examinations

IGCSE

IGCSE Information and Communication Technology (4385)

Specimen Case Study and Practical Tasks

Common to both Tiers

Specimen Case Study and Practical Tasks

Pasta Plus is a restaurant that specialises in Italian food. The owners always use fresh, locally grown ingredients where possible. Foods which cannot be found locally are imported direct from Italy. The menu is changed regularly to reflect the seasonal availability of some foods. The main courses are either a variety of pasta with different sauces or pizzas with different toppings. Each of these may be accompanied by a seasonal salad.

Pasta Plus has been given a high rating in a national Good Food Guide and the publicity has caused an increase in bookings. As a result of this, the owners have introduced a new booking system. This consists of a spreadsheet and a database.

The restaurant is open seven evenings a week from 6 p.m. to 1 a.m. There are 15 tables that can seat 4 people and 15 smaller tables that can seat 2 people. Larger groups of customers can book multiple tables. Customers book tables in advance. Table bookings are on the hour or half hour.

The spreadsheet package in the booking system uses 28 sheets, one for each evening for the next 4 weeks. Each sheet shows all the half-hour time slots between 6 p.m. and 1 a.m. that can be booked in an evening. Each booking occupies four consecutive slots because a meal is expected to last for two hours. A booking is indicated by a four-digit booking number and a customer surname. Bookings are not accepted for more than 28 days into the future and at the end of each day, that day's sheet is cleared and renamed with the next date needed.

The database has two files, CUSTOMER and BOOKING.

CUSTOMER contains the personal details of everybody who has made a booking in the last two years. Each customer is given a customer number. Customer numbers are allocated consecutively and are used as the key field. The file is used mainly to look up details alphabetically and is sorted in order of surname. Duplicated surnames are sorted by first name and where people have both names the same, the telephone number is used to distinguish between them.

BOOKING is linked to CUSTOMER by the customer number field. BOOKING also contains the booking date and time, and the booking number which is shown on the booked slot of the spreadsheet. BOOKING is sorted in date order.

Instructions to Candidates

1. All of the tasks should be attempted.

2. Work submitted must be your own and must be independent from that of other candidates. Sharing the work for any task may result in all of your work being rejected.

3. The time allowed for each task is that set by your examination centre.

4. The deadline date for each task is that set by your examination centre. Time allowances and deadlines will reflect the need for the centre to submit the work to London Examinations by the required date.

5. There are no limitations on the hardware or software that you may use.

6. All material submitted as evidence for a task **must** be clearly labelled with the Candidate Name and Candidate Number plus the task identification e.g. Task One (a), Task One (b).

7. Only work which is specified in the set tasks should be submitted.

Note: Four marks will be awarded for full compliance with instructions 6 and 7.

Task One

The restaurant menu is printed on two sides of a piece of A4 card. The card is in landscape orientation so that it makes a four-page menu when folded in half.

(a)   Sketch an initial design for the menu on A4 paper. The design does not need details of each dish but should include

- a front cover with a name, logo and appropriate artwork

- sections blocked out for first courses, main courses, desserts and drinks

- opening hours and contact details for bookings

- general information about the restaurant.

9 marks

(b)   Make and print the menu with all relevant details included. The menu may be printed on paper instead of card but must use both sides of one sheet of A4. **Any changes from the design in part (a) must be clearly indicated.**

7 marks

(c)   Make and print **one** sheet of the spreadsheet that is used to show an evening's
       bookings. The sheet must show

- all two-seat and four-seat tables

- a minimum of 25 bookings for that evening

- bookings for groups of 6, 8 and 10 people. Annotate the sheet to
  indicate these.

8 marks

(d)   Design and explain a script or macro which may be used to mark the three
       time slots after a booking time to show that the table is occupied. The design
       may be submitted in any suitable form, e.g. a flowchart, structured English or
       a scripting language.

6 marks

(e)   (i)   Make and print the macro or script from (d). Annotate the printout to
       explain
             how it works.
       (ii) Attach the macro or script to a button or another control, e.g. a menu
             item or icon. Print a screen which shows the button or control.

Print a screen which shows how the attachment has been made.

8 marks

Total marks for Task One: 38

Task Two

(a)   Sketch designs for the data input screens for the database. Make one sketch for inputting customer details and one for making a booking. The screens should be customised for ease of use and for an attractive appearance. Annotate your designs to show

- field names, data types and sizes
- any validation checks used.

Explain the purpose of any customising that you have shown.

10 marks

(b)   Using your design from Task Two part (a) (above), build a database which will function as described in the case study. Make printouts of the CUSTOMER and BOOKING tables or files. Show the fields with their data types and sizes. Include any formulae, functions, validation or other operations being carried out on those fields. **Any changes from the design in part (a) must be clearly indicated.**

8 marks

(c)   Enter details for 30 customers. Some of them should have duplicate names. Enter 15 bookings spread over a three-day period. Print out the following items as evidence

- two reports showing the customer details and booking information. The contents of each report must be sorted into the correct order
- the customer screen and the booking screen. Indicate and justify any changes made from your design in Task Two part (a)
- a screen which shows the link between the two tables.

8 marks

(d)   The owners of Pasta Plus wish to cater for vegetarian customers. Add a new field called 'vegetarian' to the database. Print out the field details and the revised data input screen. Annotate the printout to justify your choice of field type. Amend your database so that 6 of your customers are vegetarian. Perform a search for these customers and print out a suitable report.

4 marks

(e) The owners of Pasta Plus want to send a letter to all of their customers to tell them that they are holding a Vegetarian Night. Sketch a design for the letter. Create the letter and print out the following items as evidence

- letter and envelope templates
- **one** completed letter and envelope. The envelope may be printed as a sheet of paper
- a screen to show that the letter template is linked to the database.

8 marks

Total marks for Task Two: 38

Edexcel International

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IGCSE

IGCSE Information and Communication Technology (4385)

Mark Schemes for Specimen Papers

Paper 1F (Foundation Tier)

1.a   Computer aided design.
           1 mark

1.b.   More accurate, easier to amend, easier to store/file/retrieve, less space
           needed for storage, able to re-scale drawings, better presentation for
           customers, 3d views.
           Accept faster / cheaper / less work if qualified by a valid reason.
           2 marks. 1 mark for each valid point.

1.c.   Answers may include:
           Word processor, database, spreadsheet, DTP.
           3 marks (1 mark for any sensible software package)

Total 6 marks

2.a.   Graphical User Interface
           1 mark

2.b.   Answers may include:
           More intuitive, easier to understand, no need to type exact command,
           more user-friendly, easy to switch between programs.
           1 mark for a valid advantage.

2.c.   windows: an independent area on the screen showing a program / folder
           contents, or similar wording.
           1 mark for a recognisable description; **1 mark** for a valid example.

           icons: small pictures / symbols which connect to a program / activity /
           folder / file
           1 mark for a recognisable description; **1 mark** for a valid example.

           menus: a text list of options which can be selected in some way.
           1 mark for a recognisable description; **1 mark** for a valid example.

           pointers: symbols / small pictures / icons which move in response to
           movements of a mouse / other pointing device.
           1 mark for a recognisable description; **1 mark** for a valid example.

           Mentioning the mouse pointer in a recognisable description should get 2
           marks.

Total 10 marks

3.a. (i) Temperature, humidity / moisture content.
           1 mark
   (ii)   electronic thermometer / digital thermometer / thermocouple
           (NOT temperature sensor)
           Hygrometer (NOT humidity sensor)
           1 mark

3.b.   Signal sent by sensor / named sensor
           Signal sent to CPU / processed by CPU
           Set values stored in computer
           Compare values / decision made
           Send signal to air-conditioning / switch
           Air-conditioning change affects sensor
           3 marks (1 mark for each valid point)

3.c.   Answers may include:
           Swipe cards, swipe card reader linked to computer
           Smart cards, card reader linked to computer
           Keypad, code / password checked by computer
           Fingerprints, fingerprint reader linked to computer
           Iris scan, scanner linked to computer
           Palm print, scanner linked to computer
           4 marks
           2 marks for **each** of **two** methods (1 mark for a viable method, 1 mark for
           detail)

Total 9 marks

4.a.   A set of records
           Containing the same fields
           2 marks.

4.b.   Customer name / home telephone
           1 mark.

4.c.   To identify a record
           Uniquely
           2 marks

4.d.   Checking data
           Is of the right type / range / size
           2 marks

4.e. (i)   Range check, over 200 0000 / between 200 0000 and 500 0000
           Length check, 7 digits / 8 characters if space is included.
           1 mark

(ii)   Range check, over 2000000 / between 2000000 and 5000000
         Length check, 7 digits / characters
         Accept any sensible explanation.
         1 mark

4.f. (i)   865 and 632 and 232.
            1 mark for all numbers correct. Answers may be in any order.

    (ii)   Smith P and Stone G
            1 mark for both names correct. Answers may be in any order.

4.g.   Person's name / details may have been entered incorrectly by the clerk.
            2 marks

Total 13 marks

5.a.   1 mark for each correct letter
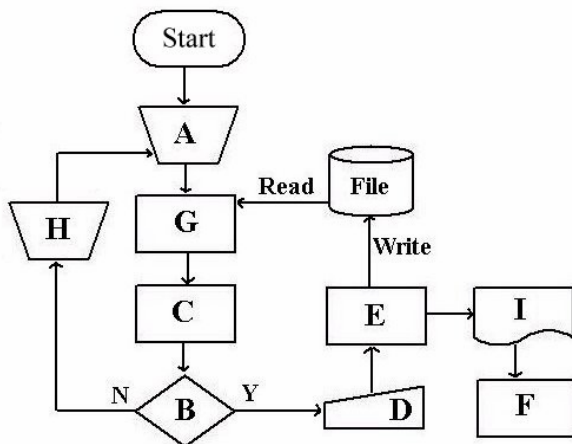
         8 marks

5.b.   Name, address, telephone, credit card fields.
            4 fields = 2 marks **OR** 3 fields = 1 mark
            Form title = 1 mark
            Exit button or other method of leaving the screen = 1 mark
            4 marks

Total 12 marks

6.a.   Answers may include: RSI, Strain / injury / damage to eyes / back / wrists / hands / fingers.
Allow any reasonable answers.
2 marks (1 mark per risk)

6.b.   Answers must relate to part (a) and could include wrist pads, ergonomic keyboards / furniture, anti-glare screens / screen filters / regular breaks.
2 marks (1 mark for each of two sensible measures which answer the risks from (a). If part (a) has been answered wrongly, accept any sensible answer)

Total 4 marks

7.a.   Find web page / site, search for goods / view brochure / view goods, select goods / add to basket / buy goods, input personal /delivery details, input credit card details / arrange payment.
4 marks (1 mark for each step in a logical order)

7.b.   Answers may include: fraud, delivery problems, return of goods, unable to sample goods, fear of technology, no credit card.
2 marks (1 mark for a valid suggestion; 1 mark for relevant detail)

Total 6 marks

8.a.   Answers may include: library, attendance, admission to rooms / exams / campus, admission to events / activities, use of facilities, ID card, storing personal details.
2 marks (1 mark for each valid suggestion)

8.b.   Answers may include: bar code, magnetic strip, chip, punched holes, magnetic ink, printed text.
2 marks (1 mark for each valid suggestion)

8.c.   (i) Answers may include: steal card and use it to make purchases; impersonation of another student in exams; registering another student for lessons.
2 marks (1 mark for a valid suggestion; 1 mark for relevant detail)

(ii) Answers may include: photograph, PIN number, fingerprint, password. Accept any sensible, card-related, measure.
1 mark

(iii) Answer must relate to part (ii). Accept any sensible explanation of how the measure would work e.g. photograph compared to person using the card, PIN number to be entered by the card user when making a purchase.
1 mark

Total 8 marks

9.a. (i)   Modem, telephone / comms socket / router.
            2 marks.

9.a.(ii) Browser/ communications software.
            1 mark.

9.b.   Answers may include: Use of e-mail, being able to put up a website, use for
        research, being able to order goods electronically, e-commerce.
        2 marks (1 mark for each valid suggestion)

9.c.   Filtering software
        A description of how it works, e.g. block lists, keywords, site lists
        2 marks (1 mark for filter; 1 mark for relevant detail)

Total 7 marks

10.a.   Data must not be accessed by unauthorised personnel; data must not be
        misused.
        1 mark

10.b.   Answers may include: passwords, access levels, data encryption, firewalls.
        2 marks (1 mark for each valid suggestion)

10.c.   Employees check their own records, on a regular / periodic basis.
        2 marks

10.d.   **3 marks** (1 mark for a relevant example of each type of update)

Total 8 marks

11.a.   (i) Answers may include: temperature, blood pressure, pulse, heart rate,
        breathing rate.
        Allow any reasonable, medical measurement.
        1 mark
        (ii) Answers must relate to part (i). Allow a named, relevant sensor or a clear
        description.
        1 mark

11.b.   A Sensor
        B CPU
        C Storage
        3 marks

Total 5 marks

12.a.   Answers may include:
LAN uses cables / radio, WAN uses telecoms systems.
LAN limited to same / nearby buildings, WAN can be world-wide.
WAN needs modem / ISDN adapter, LAN uses NIC.
WAN limited to speed of modem / Kb/sec, LAN runs at Mb/sec.
6 marks (Up to 2 marks for each full description of a difference)

12.b.   Answers may include: room service, local information, hotel information, accounts / bills, menus.
2 marks (1 mark for each valid suggestion)

12.c.   (i) Hardware: e.g. remote drive, removable drive / media, CD-R / DVD-R, tape.
Software: Scheduler, backup program, file copying program.
Safe storage of media / files.
Transaction file or equivalent.
2 Marks (1 mark for hardware, 1 mark for software, 1 mark for storage, 1 mark for transaction file)
OR
RAID / mirrored drives.
One drive is copy of the other.
Data / files backed up / duplicated automatically.
If one drive fails, the second drive is used to rebuild a new mirror,
2 marks (1 mark for each valid point)

(ii) Restart the system, reload the system files, restore the backed up files, run the transaction file.
2 marks (1 mark for each valid point)

Total 12 marks

Edexcel International

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IGCSE

IGCSE Information and Communication Technology (4385)

Mark Schemes for Specimen Papers

Paper 2H (Higher Tier)

1.a.   Answers may include: RSI, Strain / injury / damage to eyes / back / wrists / hands / fingers.
Allow any reasonable answers.
2 marks (1 mark per risk)

1.b.   Answers must relate to part (a) and could include wrist pads, ergonomic keyboards / furniture, anti glare screens / screen filters/ regular breaks.
2 marks. 1 mark for each of two sensible measures which answer the risks from (a). If part (a) has been answered wrongly, accept any sensible answer.

Total 4 marks

2.a.   Find web page / site, search for goods / view brochure / view goods, select goods / add to basket / buy goods, input personal / delivery details, input credit card details / arrange payment.
4 marks (1 mark for each step in a logical order)

2.b.   Answers may include: fraud, delivery problems, return of goods, unable to sample goods, fear of technology, no credit card.
2 marks (1 mark for a valid suggestion; 1 mark for relevant detail)

Total 6 marks

3.a.   Answers may include: library, attendance, admission to rooms / exams / campus, admission to events / activities, use of facilities, ID card, storing personal details.
2 marks (1 mark for each valid suggestion)

3.b.   Answers may include bar code, magnetic strip, chip, punched holes, magnetic ink, printed text.
2 marks (1 mark for each valid suggestion)

3.c.   (i) Answers may include: steal card and use it to make purchases; impersonation of another student in exams; registering another student for lessons.
2 marks (1 mark for a valid suggestion; 1 mark for relevant detail)

(ii) Answers may include: photograph, PIN number, fingerprint, password. Accept any sensible, card-related measure.
1 mark

(iii) Answer must relate to part (ii). Accept any sensible explanation of how the measure would work e.g. photograph compared to person using the card, PIN number to be entered by the card user when making a purchase.
1 mark

Total 8 marks

4.a.(i)   Modem, telephone / comms socket / router.
          2 marks

4.a.(ii) Browser / communications software.
          1 mark

4.b.   Answers may include: use of e-mail, being able to put up a website, use for
          research, being able to order goods electronically, e-commerce.
          2 marks. 1 mark for each valid suggestion.

4.c.   Filtering software.
          A description of how it works, e.g. block lists, keywords, site lists
          2 marks (1 mark for filter; 1 mark for relevant detail)

Total 7 marks

5.a.   Data must not be accessed by unauthorised personnel; data must not be
          misused.
          1 mark

5.b.   Answers may include: passwords, access levels, data encryption, firewalls.
          2 marks (1 mark for each valid suggestion)

5.c.   Employees check their own records, on a regular / periodic basis.
          2 marks

5.d.   **3 marks** (1 mark for a relevant example of each type of update)

Total 8 marks

6.a.   (i) Answers may include: temperature, blood pressure, pulse, heart rate,
          breathing rate.
          Allow any reasonable, medical measurement.
          1 mark
          (ii) Answers must relate to part (i). Allow a named, relevant sensor or a clear
          description.
          1 mark

6.b.   A Sensor
          B CPU
          C Storage
          3 marks

Total 5 marks

7.a.   Answers may include:
         LAN uses cables/radio, WAN uses telecoms systems.
         LAN limited to same / nearby buildings, WAN can be world-wide.
         WAN needs modem/ ISDN adapter, LAN uses NIC.
         WAN limited to speed of modem / Kb/sec, LAN runs at Mb/sec.
         6 marks (Up to 2 marks for each full description of a difference)

7.b.   Answers may include: room service, local information, hotel information,
         accounts / bills, menus,
         2 marks (1 mark for each valid suggestion)

7.c. (i) Hardware: e.g. remote drive, removable drive / media, CD-R / DVD-R, tape
         Software: scheduler, backup program, file copying program
         Safe storage of media / files
         Transaction file or equivalent
         2 Marks (1 mark for hardware, 1 mark for software, 1 mark for storage, 1
         mark for transaction file)
         OR
         RAID / mirrored drives
         One drive is copy of the other
         Data / files backed up / duplicated automatically
         If one drive fails, the second drive is used to rebuild a new mirror.
         2 marks (1 mark for each valid point)

   (ii) Restart the system, reload the system files, restore the backed up files, run the
         transaction file.
         2 marks (1 mark for each valid point)

Total 12 marks

8.a.   Computer aided design / CAD / named software with CAD in the name.
         Specialist libraries of objects, calculates costs / quantities of materials,
         converts lines to dimensions, converts dimensions to lines.
         2 marks (1 mark for software; 1 mark for reason related to software)

8.b (i) Answers may include:
         calculates costs / quantities of materials
         greater accuracy
         easier to amend
         easier to file / retrieve plans
         less storage space needed
         better presentation attracts customers
         hi-tech image attracts customers
         3 marks (1 mark for each valid point. Only accept faster / cheaper / less work
         if qualified by why it is faster etc.)

8.b (ii) Answers may include:
         allows 3D images
         allows different views
         1 mark Only accept faster / cheaper if qualified by why it is faster / cheaper.
Total 6 marks

9.a.	Answers may include:
CL keyboard input, GUI keyboard plus pointers.
CL need to know exact commands, GUI intuitive.
CL text only, GUI pictorial / visual.
2 marks (1 mark for each difference)

9.b.	Answers may include:
Can use enlarged fonts / icons, for visually handicapped.
Can use sound prompts, for visually handicapped.
Can use pointing devices, for physically handicapped.
Can use speech input, for physically handicapped.
4 marks (1 mark for each feature; 1 mark for explanation)

Total 6 marks

10.a.	Investigation, implementation, monitoring, testing, evaluation, documentation, maintenance.
3 marks (1 mark for each of three stages)

10.b.	identification / specification of the problem, problems with the current system, inputs / outputs, desired outcomes, success criteria.
3 marks (1 mark for each valid point)

10.c	design plan, validation, testing, how software will be used, test data, hardware specification, flow charts, DFDs, HCI, algorithms, alternative solutions, file structures (not software specific).
3 marks (1 mark for each valid point)

Total 9 marks

11.a.	(Input) signal from temperature / humidity sensor, signal from thermocouple / digital thermometer / electronic thermometer / hygrometer.
(Output) signal to actuator / switch / central heating control / OWTTE
2 marks

11.b.	temperature set for each room
values stored on computer
AD conversion (for input / output signal)
compare readings to set values
decision making by computer / CPU
4 marks (1 mark for each valid point)

11.c. Answers may include:
Locking of doors, use of keycards / biometrics / etc.
Burglar alarm, use of pressure pads / contact sensors / IR beams / etc.
Motion sensors, to activate lighting / video cameras / etc.

Do not allow any suggestions that involve human intervention, e.g.. guards watching the video cameras.
Do not allow any suggestions dealing with security of the control computer, e.g.. anti hacking / control of the computer room door.
4 marks (2 marks for each appropriate suggestion with named sensor / equipment)

Total 10 marks

12.a. Customer reference number   numeric
            4 - 10
Customer name   text / alphanumeric
            20 - 30
Number of guests   numeric
            1
Home telephone number   text / numeric / alphanumeric
            7 - 15
Deposit paid   currency
            4 - 7
Amount owing   currency
            4 - 7

3 marks   10 - 12 correct 3 marks
                7 - 9 correct 2 marks
                4 - 6 correct 1 mark

12.b. Customer reference number. States it is a number, therefore numeric.
Length must allow for several hotels / several rooms / advance bookings.
Accept any sensible argument.

Number of guests. Number must be numeric.
Length is 1 as it is unlikely that a hotel would allow 10 people in a room.
Accept any sensible argument.

Deposit paid. Currency as it is a sum of money.
Length allows for minimum figure of £10.00 or maximum of 10000.00 if candidate is working in other currencies.
Accept any sensible argument.
3 marks (1 mark for each reasonable justification)

12.c. (i)   Double booking may occur.
        2 marks (1 mark for double booking;1 mark for explanatory detail)

12.c (ii)   Answers may include:
             Table locked when accessed
             Second person trying to access table gets appropriate message / can open
             Read Only
             Table not unlocked until first person finishes / first booking is completed.
             3 marks (1 mark for each valid point in any workable method)

Total 11 marks

13.(a)   A possible flowchart is:
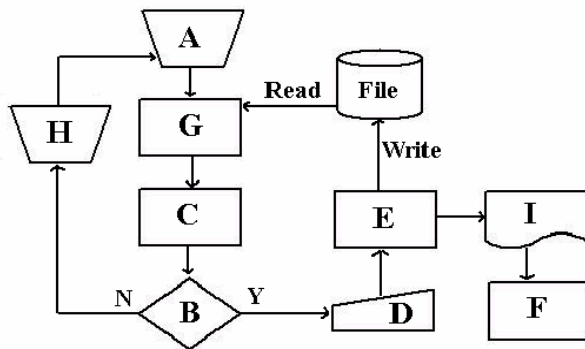
             Award 1 mark for each letter in the correct order, to a maximum of 6
             marks. I and F may be transposed.
             Award 1 mark for the correct use of **two** different flowchart symbols.
             OR award 2 marks for the correct use of **four** different flowchart
             symbols.

Total 8 marks

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IGCSE Information and Communication Technology (4385)

Mark Schemes for Specimen Case Study and Practical Tasks

Common to both Tiers

Mark Scheme for Specimen Case Study and Practical Tasks

Note

Several of the sub-tasks have more marking points than there are marks available. These sub-tasks have a design element to them and the extra points are to allow for differences in candidates' ideas about design.

Markers should be careful not to award marks over the maximum allowable.

Task One

(a)

Four pages which fit back to back correctly.	1 mark
Correct name on front cover.	1 mark
Logo on front, using appropriate words/pictures	1 mark
Appropriate clipart or other artwork on the front.	1 mark
Inside pages with sections for starters/first courses, main courses, desserts, drinks.	1 mark
Correct information on opening hours: 7 days, 6 p.m. to 1 a.m.	1 mark
Two sensible contact details, e.g. telephone, fax, e-mail, address.	2 marks
General and promotional detail. Two reasonable statements e.g. seating, Food Guide rating, use of local produce, real Italian ingredients.	2 marks

Maximum 9 marks

(b)   There are 10 design elements in part (a)

Name	Logo	Artwork
Starters/First courses	Main courses	Desserts
Drinks	Opening hours	Contact details
General information		

Award 1 mark for any three items which match the design submitted for part (a), up to a maximum of 3 marks.

Items which do not match the design may only be counted if the candidate explains why the change has been made.

                                                                                3 marks

Reasonable suggestions for

Starters/first courses	1 mark
Main courses which include pastas and pizzas	1 mark
Desserts	1 mark
Drinks	1 mark
Pricing details	1 mark
Mention of seasonal salad with main courses	1 mark

                                                Maximum 7 marks for both parts of (b)

(c)

Sheet named	1 mark
Sheet dated	1 mark
Shows 2 and 4 seat tables in sensible blocks	1 mark
30 minute time slots shown	1 mark
6 p.m. to 12.30 a.m.	1 mark
25 bookings shown (minimum)	1 mark
Booking occupies 8 time slots / 2 hours	1 mark
Group bookings shown for 6, 8, 10 seats	1 mark
Annotated to show group bookings	1 mark
4-digit booking number plus surname	1 mark

                                                                Maximum 8 marks

(d)   The design should include

- selection of the first cell after the booking entry **OR** a start from the booking cell
- an appropriate entry into the first cell
- a method of selecting the next 2 cells
- a method of duplicating the first cell entry into the next 2 cells.

Award 1 mark for each process.

For a flow chart, award 1 mark for flow direction being shown by arrows.

For a flow chart, award 1 mark for a logical series of steps which give a usable solution.

OR

For structured English or a script, award 1 mark for structure.

For structured English or a script, award 1 mark for a logical series of steps which give a usable solution.

Maximum 6 marks

(e)   (i)   Printout of the macro or script.   1 mark

Printout closely matches design,   2 marks

OR recognisably matches design.   1 mark

Relevant annotation, 1 mark for each of 4 explanatory notes

4 marks

(ii) Printout showing button clearly indicated.   1 mark

Printout showing attachment method,
e.g. a button properties   1 mark
box showing a macro attached, a script editor window with an appropriate subroutine such as Button, Cmd_Click, etc.

Total 8 marks

Total for Task One: 38 marks

Task Two

(a)

Customer details screen

Fields:	customer number,	numeric,	4 - 6	1 mark
	surname,	text,	10 -20	1 mark
	first name,	text,	8 - 16	1 mark
	telephone number,	text or numeric,	6 - 12	1 mark

Other fields e.g. address, may be given marks for validation checks.

Award 1 mark each for up to 2 sensible validation checks   2 marks

Award 1 mark each for up to 2 sensible, explained customisations   2 marks

Maximum 5 marks

Bookings screen

Fields:	customer number,	numeric,		4 - 6	1 mark
	booking number,	numeric,		4	1 mark
	date,	date,	format		1 mark
	time,	time,	format		1 mark

Other fields e.g. number of people, may be given marks for validation checks

Award 1 mark each for up to 2 sensible validation checks   2 marks

Award 1 mark each for up to 2 sensible, explained customisations   2 marks

Maximum 5 marks

Maximum 10 marks for both parts of (a)

(b)

Printout of CUSTOMER table / file	1 mark
Printout of BOOKING table / file	1 mark

For CUSTOMER, look for customer number, surname, first name and telephone number.
Or the candidate's equivalent. Award 2 marks if all 4 fields, types and sizes match design. **Or** award 1 mark if 3 fields, types and sizes match design. Items which do not match the design may only be counted if the candidate explains why the change has been made.

2 marks

For BOOKING, look for customer number, booking number, date and time. **Or** the candidate's equivalent. Award 2 marks if all 4 fields, types and sizes match design. **Or** award 1 mark if 3 fields, types and sizes match design. Items which do not match the design may only be counted if the candidate explains why the change has been made.

2 marks

Customer number in the CUSTOMER table has auto number or other method of being filled by the database.

1 mark

Validations or use of formulae, calculations or functions. 1 mark each to a maximum of 3.

3 marks

Overall maximum 8 marks

(c)

Customer details report

30 customers	1 mark
Duplicate surnames	1 mark
Duplicate surnames and first names	1 mark
Sorted, with annotation which justifies the sort order	1 mark

Bookings report

15 bookings over 3 days	1 mark
Sorted, with annotation which justifies the sort order	1 mark
Printout of customer screen	1 mark
Printout of booking screen	1 mark
Customer screen matches design or has changes justified	1 mark
Booking screen matches design or has changes justified	1 mark
Printout showing link between tables	1 mark

Maximum 8 marks

(d)

Printout showing field details for vegetarian	1 mark
Printout of input screen, showing vegetarian field	1 mark
Annotation with sensible justification of field type	1 mark
Printout of report showing 6 customers	1 mark
6 customers are shown as vegetarian	1 mark
	Maximum 4 marks

(e)

Design sketch for letter

Heading details, address etc.	1 mark
Logo	1 mark
Skeleton text indicated	1 mark
Fields / tags indicated	1 mark
	Maximum 3 marks

Printout of letter	1 mark
Letter matches design	1 mark
Fields / tags replaced by data	1 mark
Letter content:	
Heading which identifies the restaurant	1 mark
Text describing a vegetarian night	1 mark
Printout of envelope	1 mark
Printout showing link between letter and database	1 mark
	Maximum 5 marks

Total for Task Two: 38 marks

Standard Working Marks

All work labelled with candidate name and number	1 mark
All work labelled with task number and part	1 mark

No extra material submitted	2 marks
OR	
Up to 2 extra sheets submitted	1 mark

Maximum total 4 marks

Total for Task One and Task Two: 80 marks