



**ADVANCED SUBSIDIARY GCE
INFORMATION AND COMMUNICATION
TECHNOLOGY 3838/7838**

Structured Practical ICT Tasks

2513

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Maximum Mark 120



INSTRUCTIONS TO CANDIDATES

- You should attempt all tasks, working independently from other candidates.
- There are no time limitations on the tasks other than that they must be submitted by the appropriate internal deadline set by the Candidate's Centre. This deadline will reflect the need for the Centre to complete marking of the tasks and submission of marks to OCR by 15th May 2009.
- There are no restrictions on computing facilities, hardware or software that may be used.
- All data files required for these tasks can be downloaded from www.ocr.org.uk/qualifications/as_alevelgce/ict/documents.html#Pre-release_materials
- **Once your tasks have been marked by the Centre, they cannot be re-submitted for improvements.**

INFORMATION FOR CANDIDATES

- **Candidates are reminded of the need for good English and clear presentation in their answers. They will be expected to have used software tools, such as spellcheckers, to help achieve this.**
- This document consists of **12** pages. Any blank pages are indicated.

Notice to candidates

- 1 The work which you submit for assessment must be your own.

However, you may:
 - (a) quote from books or any other sources: if you do, you must state which ones you have used;
 - (b) receive any guidance from someone other than your teacher: if so you must tell your teacher, who will record the nature of the assistance given to you.
- 2 If you copy from someone else or allow another candidate to copy from you, or if you cheat in any other way, **you may be disqualified from at least the subject concerned.**
- 3 When you hand in your coursework for assessment, you will be required to sign that you have understood and followed the coursework and portfolio requirements for the subject.

ALWAYS REMEMBER – YOUR WORK MUST BE YOUR OWN

Task 1 [Total 30 Marks]

This is a design, software development and documentation task.

SF Estates is a local estate agency that helps vendors to sell their homes.

The agents, employed by SF Estates, visit the homes for sale to provide valuations and to gather information for the preparation of marketing materials. Steve Francis, the managing director of SF Estates, has realised that the information being collected by the agents varies. He would like to ensure that the information collected is consistent by using a data collection form.

The information that he considers to be important is:

- vendor's name, address and telephone number
- type of house (detached, semi-detached, terrace or end-terrace)
- number of
 - bedrooms
 - bathrooms
 - reception rooms
 - garages
- how far away (in miles) the following are
 - nearest train station
 - nearest school
 - local shops
 - supermarket
- for each room
 - approximate width and length in metres
 - number of radiators
 - whether there is
 - a telephone point
 - TV aerial socket
 - gas fire
 - access to loft
 - double glazing
 - number of electrical sockets
 - type of light (ceiling or wall)
- name of agent with date and time of visit
- estimated value of the house.

Steve would like the name of the company and the company logo to be included at the top of the form.

- (a)** Design a data collection form to fit on a maximum of **two** sides of A4 paper that could be used by the agents. **[9]**

Steve would like each member of staff to have a business card. Some of the information that must be present on the business cards includes:

- address: 55 Croydon Road, Birmingham, B22 5BC
- telephone: 0121 555 555
- fax: 0121 555 666
- mobile telephone number of staff member
- email address (initial then surname, no full stops or spaces @sfestates.biz – eg for Joe Cooper it would be jcooper@sfestates.biz)

- (b) (i)** Design a personalised business card that could be used by staff at SF Estates. You should include a design specification. You must **not** use a computer for **(b) (i)**. [3]
- (ii)** Produce a single copy of the business card to be used by the managing director, Steve Francis. [1]

Steve has been advised that if he uses mail merge then he can produce personalised business cards for each member of staff.

Import the file staff.txt into a spreadsheet and then create a mail merge version of the business cards using the spreadsheet as the data source.

- (c) (i)** The email address is currently missing from the data source. Using a function in the spreadsheet, create the email address for each member of staff. Annotate the function to describe what it does. [1]
- (ii)** Show screenshot evidence of how the word processed document was linked to the spreadsheet data source – your evidence must clearly show that the data source was a spreadsheet file. [1]
- (iii)** Show evidence of the merge field codes. [1]

Steve's personal assistant Edel will be responsible for producing extra copies of the business cards when they are needed.

(d) Produce a help sheet that will show Edel how to:

- add a new member of staff to the data source
- remove a member of staff from the data source
- print a single sheet of business cards for a single member of staff (this will need to include a description of how to change the paper to card in the printer). [8]

As Steve needs more business cards than everyone else, Edel has to produce these more often.

Produce a macro, attached to the business cards document, that will enable Edel to print a sheet of Steve's business cards.

- (e) (i)** Show annotated screenshot evidence of each step of creating and recording the macro. Annotation should explain what is being done at each stage. [3]
- (ii)** Show a printout of the macro code that has been produced. [1]

Edel needs to be able to click on a single button on the toolbar that will run the macro.

- (iii)** Show screenshot evidence of the stages that you have used to create the new toolbar button. The evidence must include the button you have created. [2]

Task 2 [Total 24 Marks]**This is a design, software development and testing task.**

Ashley is the agent responsible for marketing at SF Estates. He would like the agents to use a laptop computer when visiting vendors. This would enable the agents to show a short presentation about the friendly and personal service offered by SF Estates to the vendors. He has decided that the presentation must include:

- an opening menu screen with
 - buttons to all the other screens
 - logo
 - title of SF Estates
- information about each of the following on a single screen each
 - the staff (pictures and names only)
 - Steve, Amanda, Ashley, Edel, Pat, Dan, Jessica
 - a list of the services provided with a short (30–60 seconds) video about the services
 - examples of houses that have been sold
 - opening times of the agency
- the logo must appear on every screen
- a button to the menu screen from every other screen (except the menu screen itself)
- a button to a database that contains information about all the houses for sale.

- (a)** Using a diagram, design the overall structure of the presentation, showing how all the screens will link together. **[3]**

Produce the presentation for Ashley.

- (b) (i)** Show evidence of all the screens you have produced. **[5]**
- (ii)** Show screenshot evidence of how all the buttons you have created are linked to each destination. **[3]**
- (iii)** Show screenshot evidence of how a master slide has been used to include the logo and a button to return to the menu screen. The evidence must show that the button does not appear on the menu screen. **[2]**

The video of the list of services provided must include a title at the beginning and a slogan at the end.

- (c) (i)** Show annotated screenshot evidence of how you have edited the video so that it includes a title and a slogan. **[3]**
- (ii)** Show annotated screenshot evidence of how you have saved the final video and imported it into the presentation on the appropriate screen. **[2]**

Ashley is keen that the presentation should be of a high quality. He would therefore like to see a test plan produced.

- (d) Complete the test plan in table 2.1 for the presentation showing **six** further tests. Each test should be for a different aspect of the presentation and must not test the same type of feature twice. Each test must be specific to this presentation. Only the first **six** tests will be marked. An example is shown which must not be used as part of your answer, nor must testing any other buttons. **[6]**

Item to Test	How to test it	Expected Result
Staff button on the menu works.	Click the button on the menu to open the staff screen.	Staff screen appears.

Table 2.1

Task 3 [Total 36 Marks]**This is a software development, testing and documentation task.**

Pat is responsible for all the finances at SF Estates. Each agent incurs travel expenses each month. As each agent is going to be issued with a laptop computer, Pat would like a spreadsheet to be created to keep track of each agent's travel expenses during each month. He has identified the following requirements:

- there should be a single worksheet for the agent to input their expenses for the month
- there should be a separate worksheet for calculating the total expenses for the month
- on the input worksheet, the agent should be able to
 - select the start, destination and return location of each journey using only the mouse
 - enter the number of miles for the outward journey and the number of miles for the return journey
 - enter the start time, arrival time at the destination, leaving time from the destination and the time of returning to the office or home
 - enter the current date by selecting the day, month and year from an on-screen calendar
 - click a button to record the expenses in the worksheet that calculates the total expenses for the month
- on the input worksheet, data entry should be restricted for the following data items
 - the start and return locations can be either "Home" or "Office"; the destination can be either "Client" or "Other"
 - the arrival time must always be after the start time
 - the maximum number of miles in any direction is 50
- on the worksheet for calculating the total expenses, Pat should be able to see
 - the name of the agent
 - the number of miles from the agent's home to the workplace; this should only be shown once
 - the mileage rate (eg £0.40)
 - for each journey, Pat needs to be able to see
 - date
 - start, destination and return locations
 - miles to and from the destination and total miles travelled
 - the number of miles to be deducted for home journeys
 - if the journey starts or finishes at home, then the number of miles from the agent's home to the workplace should be deducted from the total
 - if the journey starts and finishes at home, then twice the number of miles from the agent's home to the workplace should be deducted from the total
 - the total number of miles that are chargeable (ie total miles travelled, less deducted miles for home journeys)
 - the start time, arrival time at and leaving time from the destination and the time of returning to the office or home
 - the total time spent travelling
 - the total number of chargeable miles travelled during the month
 - the amount owed to the agent (ie chargeable miles multiplied by the mileage rate)
 - the total amount of time (in hours) spent travelling.

Produce the input screen that will be used by the agents.

- (a) (i) Show evidence of the input screen that you have created and enter some sample data. [3]
- (ii) Show evidence of any selection methods you have created, including the on-screen calendar. Any screenshots should show the full set of options to select from. [3]
- (iii) Show evidence of setting up validation routines for arrival time and outward miles. [2]

Produce the worksheet that will calculate the expenses.

- (b) (i) Show evidence of the worksheet that will calculate the expenses. Enter a sample row of data. [4]
- (ii) Show annotated evidence of any formulae or functions you have used. Annotation must state the purpose of each formula or function. You **must** show the row and column headings (eg 1, 2, 3; A, B, C). [4]

When the button is clicked on the input screen, the following actions should take place:

- a new row at the **top** of the list of expenses should be created (so that the newest expense is on the top)
- the data from the input screen should be copied to the calculation worksheet
- any formulae or functions should be copied to the new row on the calculation worksheet
- the **input data** only should be cleared from the input screen.

Create a macro that will perform these actions.

- (c) (i) Show annotated evidence of the macro code that is generated. Annotation should show which parts of the code complete each of these actions. [4]
- (ii) Show screenshot evidence of how the button was created. [2]

Dan is responsible for quality procedures at SF Estates and has prepared a test plan for testing the spreadsheet. The test plan is shown in Table 3.1 below.

Test Number	Description of Test	Type of Test	Input Data Value (s)	Expected Output Value / Error Message
1	Number of outward miles must be no more than 50	Extreme	"50" for outward miles on input screen	50 is accepted and displayed on the input screen as the number of outward miles
2	Arrival time must be after start time	Invalid	"12:06" for arrival time, THEN, "12:08" for start time on input screen	"Arrival time must be after start time"
3	Start location selection on input screen only allows "Home" or "Office"	Invalid	"Client" on input screen (or try to select both "home" and "office" options together if an exclusive option method has been used)	"Only use Home or Office" (or spreadsheet will not allow both Home and Office options to be selected at once)
4	Check date selection works for date of journey and is transferred to expenses calculation sheet correctly	Valid	"4 Feb 2009" from on-screen calendar on input screen for date of journey	"04-02-09" appears as date of journey on the expenses calculation sheet
5	Miles to be deducted formula works correctly	Valid	Start Location is "Home", Destination is "Client", Return location is "Home" outward miles are "6", return miles are "6", home to work mileage is "4"	Miles to be deducted are "8"
6	Chargeable miles formula works correctly	Valid	Start Location is "Office", Destination is "Client", Return location is "Home" outward miles are "16", return miles are "22", home to work mileage is "5"	Chargeable miles are "33"

Table 3.1

- (d) Show annotated screenshot evidence of following the test plan in Table 3.1 above. The input and output data must be clearly visible on each screenshot. For some tests, you will need more than one screenshot per test to show both the input and output data. The tests must pass to gain marks. **[6]**

Each of the agents will need to know how to use the expenses input screen and how to print their expenses at the end of the month.

(e) Produce user documentation to show:

- how to input expenses for a journey
- how to print expenses for the month
- how to respond to validation error messages
- an explanation of at least eight terms used within the spreadsheet (eg “outward miles”).

[8]

Task 4 [Total 30 Marks]**This is a design, software development and testing task.**

Amanda is Steve's business partner and has heard that other estate agencies use databases to store details about vendors, houses, buyers, agents and offers. She has done some research and has decided that she would like to use a database for SF Estates. Data already exists for the agents in the staff.txt file so she would like this to be imported into the database. She would also like to keep details about the vendors, the houses they are selling, the potential buyers and the offers that are made on the houses.

For each vendor, she needs to know their title, forename, surname, address (as it may be different from the house they are selling), post code, telephone number and mobile number. She requires the same information for buyers too. For each house, she needs to know the type of house (detached, semi-detached, terrace, end-terrace); number of bedrooms, bathrooms, reception rooms and garages; whether or not there is central heating, a rear garden and a front garden; how far away the nearest train station, school, local shops and supermarket are; the date of the valuation, the estimated value, the vendor of the house, the date the house was taken off the market (if appropriate) and a photograph of the house.

Offers occur when a buyer suggests a price they are willing to pay for a house. For each offer, Amanda needs to know who made the offer, the agent that dealt with the offer, which house it was for, the date, the amount and an option to make any notes.

- (a) (i) Produce a hand drawn design of an entity relationship diagram for the database. You must **not** use a computer for (a) (i). [4]
- (ii) Produce a data dictionary design for the OFFER and HOUSE tables that shows the data types and lengths that will be used for each field. Give reasons for your choice of data types and lengths. [5]

Create the database and import all staff whose job title is "Estate Agent" from staff.txt into the database.

- (b) (i) Show evidence of the agent data from staff.txt after it has been imported into the database. [1]
- (ii) Produce printouts of the other tables with sample data suitable for testing the queries in (c) and (d) and the relationships, to show at least:
- 10 BUYERS
 - 12 VENDORS
 - 15 HOUSES
 - 20 OFFERS
- [4]

Amanda would like some queries preparing that will allow her to find information about particular houses that are on the market. She would like to be able to see a list of houses that meet certain criteria. However, these criteria change each time a potential buyer asks to see houses on the market. When a buyer asks about which houses are available, she would like to be able to click a button and then be prompted for the following criteria:

- type of house
- minimum number of bedrooms
- minimum number of bathrooms
- minimum price
- maximum price.

She would then like to see each house that meets the criteria. Each house must be on a separate page of a report. She needs to see all the information stored about each house, including a photograph of the house.

- (c) (i)** Create a flow chart to show what will happen after she clicks the button. **[4]**

Create the input screen(s), query and report that Amanda will use.

- (ii)** Show evidence of the input screen(s) used to enter data to find available houses. **[1]**
- (iii)** Show screenshot evidence of the criteria that have been set up and how the report uses data from the query. **[3]**
- (iv)** Show evidence of the report that will show the information about each house. As evidence show printouts of **two** different houses. **[2]**

Amanda is concerned that the agents might misspell the type of house. As part of the input screen(s), create a drop down list that displays the available types of houses and then passes that data to the query or report.

- (d) (i)** Show evidence of the drop down list that has been created, including all the options available. **[2]**
- (ii)** Show evidence of how the drop down list passes data to the query or report. **[1]**

Amanda would like to remove any offers that have been made on houses that were taken off the market over 2 years ago. Create an automated routine that will do this.

- (e)** Show annotated evidence of how the routine removes offers for houses that were taken off the market over 2 years ago. **[3]**



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