OCR
RECOGNISING ACHIEVEMENT

GCE

Applied ICT

Advanced GCE **A2 H515/H715**

Advanced Subsidiary GCE **AS H115/H315**

Mark Scheme for the Units

January 2010

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G041 How organisations use ICT

There are 100 marks available for this test. They are allocated as follows:

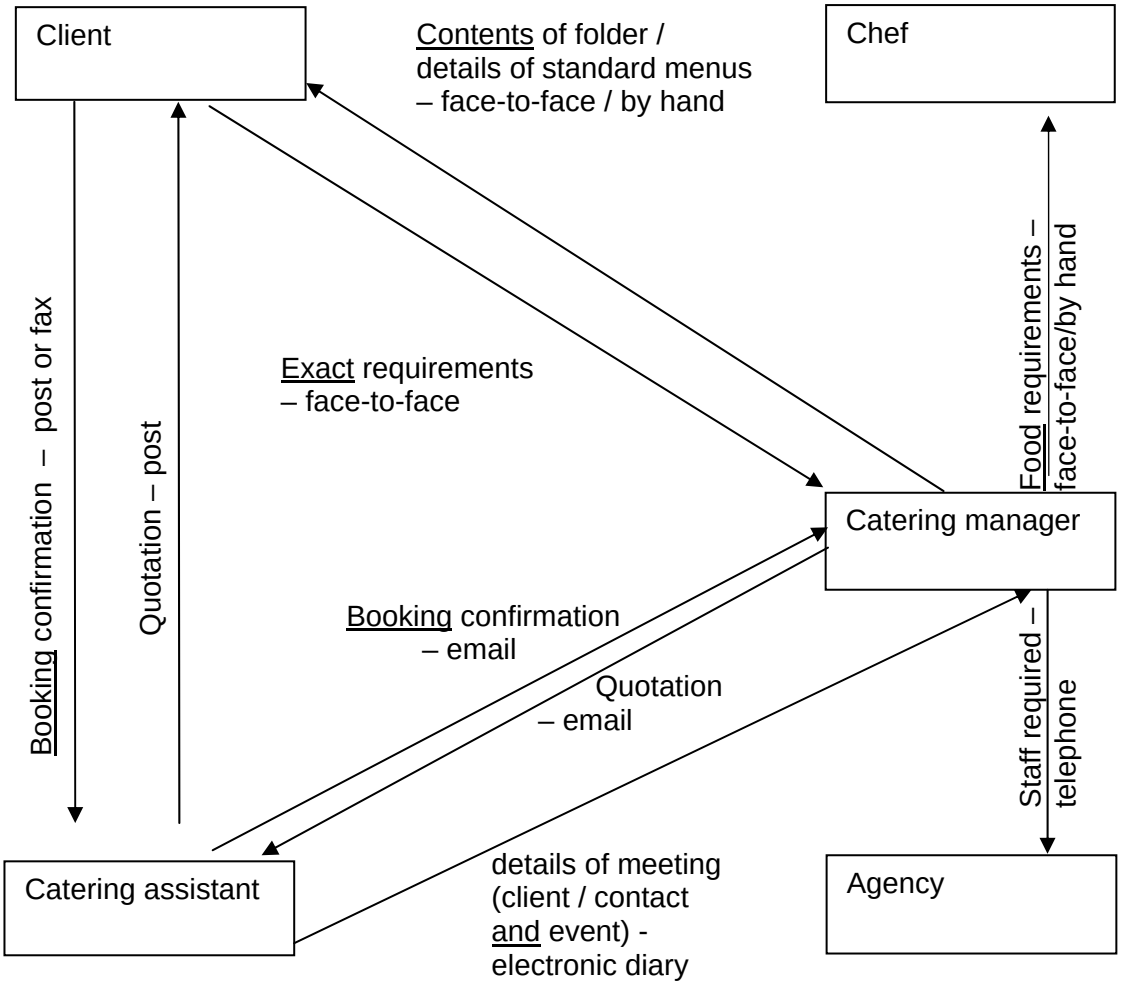
- Tasks 2 and 3 30
- Section A of the test paper 50
- Section B of the test paper 20

Task 2

1 mark each for boxes labelled
- Client
- Catering assistant
- Catering manager
- Agency
- Chef

plus labelled arrows to show the following information flows (1 mark each) and methods (1 mark each) Do not allow verbs within the information.
Max 15 marks.

Note:
- Arrows should only be awarded points if they are drawn to and from the correct boxes.
- Marks may be awarded for unconventional diagrams provided they isolate the senders and receivers of information.
- Do not award marks for flow diagrams or series of text boxes linked by arrows.
- Marks cannot be awarded for 'How' if the information is not identified/is incorrect but can be awarded if information is essentially correct but vague or incomplete.
- Labels should not be awarded marks if they are contained within the description of a process.
- If lines cross, mark labels as long as it is clear where each arrow goes
- Marks should only be awarded for labels that can be unambiguously linked to a single arrow.


Client
Contents of folder / details of standard menus – face-to-face / by hand
Chef
Booking confirmation – post or fax
Quotation – post
Exact requirements – face-to-face
Food requirements – face-to-face/by hand
Catering manager
Booking confirmation – email
Quotation – email
Staff required – telephone
Catering assistant
details of meeting (client / contact and event) - electronic diary
Agency

[15]

Task 3

AO4 is assessed through this task.

AO4 Marks	Guidance
3	A strength and a weakness in the method(s) used identified or suggestions for improving own performance.
2	A strength or a weakness in the method(s) used identified.
1	Some comment made on the method(s) used.

The quality of written communication is assessed through this task.
Tiered response based on:

Coded	Marks	Guidance
H	9-12	Candidates will show a clear understanding of the task and include detailed explanations of the implications of the DPA, with both benefits **and** limitations. Examples are clearly applied to SandwichesPlus, its staff and clients. The information will be presented in a structured and coherent form. There will be few if any errors in spelling, grammar and punctuation. Any technical terms will be used appropriately and correctly.
M	5-8	Candidates will show some understanding of the task and may include some explanations of the implications of the DPA, with either benefits **or** limitations. Some examples are applied to SandwichesPlus, its staff and clients. The information will be presented in a structured format. There may be occasional errors in spelling, grammar and punctuation. Any technical terms will be mainly correct.
L	0-4	Candidates will demonstrate a limited understanding of the task. Information may be a list of points, with little or no explanations or application to SandwichesPlus. Information will be poorly expressed and there will be limited, if any, use of technical terms. Errors of grammar, punctuation and spelling may be intrusive.

Candidates who simply state the requirements of the DPA without applying them to SandwichesPlus can only be awarded marks from the lowest mark band.

To include consideration of:

- the need to register with the Information Commissioner
  - name and address of identified data controller, eg Owner, Catering Manager, HR Manager
  - description of data to be processed, eg names, addresses etc of clients/staff details
  - description of purpose of processing data, eg to process bookings
  - details of anyone data will be disclosed to, eg client's bank/staff member's bank
  - details of any countries outside EU data may be transferred to, eg none
  - security measures to be taken, eg locked filing cabinets, secure server, access only to those who need it

- compliance with DPA principles
  - collected and processed fairly and lawfully
  - collected and used only for specified and lawful purpose(s)
  - adequate, relevant and not excessive, eg only information needed to identify clients and deliver catering services
  - accurate and up to date, eg clients given opportunity to check data collected by Catering Manager
  - kept no longer than necessary, eg data deleted if member of staff leaves
  - processed in accordance with rights of data subjects
  - kept secure, eg may need to encrypt staff data being emailed from sandwich bars to head office, only catering manager and assistant have access to client data
  - not transferred outside EU unless adequate levels of protection

- rights of staff and clients
  - access to personal data – needs application in writing plus (usually) payment of fee
  - prevent processing likely to cause damage or distress
  - prevent processing for purpose of direct marketing – applies to clients – Catering Manager needs to ask question
  - correction, blocking, erasing or destruction of inaccurate data

- benefits
  - clients will feel confident about providing personal information
  - staff will be confident about how their personal information is used

- limitations
  - possible additional costs to provide necessary security
  - additional legal responsibility on person identified as data controller

    Accept benefits or limitations relating to legal aspects.

Annotation:
- CS – response has been applied to case study
- P – identifies points
- E – identifies expansions/explanations
- + – identifies benefits
- - – identifies limitations **[15]**

Section A

1 Any **one** of

- marketing (1) plus **four** of
  - place advertisements in local press
  - place advertisements in specialist magazines
  - runs stands at wedding fayres
  - produce advertising flyers
  - negotiate contract for / order printed paper products
  - organise door-to-door leaflet drops

- finance (1) plus **four** of
  - arrange payment of staff wages
  - arrange payment of invoices
  - keep records of all financial transactions OR **one** of
    - keep records of income from sales in each sandwich bar
    - keep records of income from catering bookings
    - keep records of payments made
  - produce monthly and annual accounts
  - generate VAT returns
  - arrange for VAT to be paid

- HR (1) plus **four** of
  - keep records of training courses attended
  - keep records of qualifications obtained
  - monitor training records
  - arrange for staff to attend training courses
  - maintain personnel records
  - enter hours worked each week by sandwich bar staff
  - pass wage details to finance
  - specific recruitment task, e.g. process application forms, arrange interviews

1 mark for job function plus 1 mark per point to max 4 for matching tasks **[5]**

2 Any **five** of

- responsible for most office procedures in sandwich bar
- checking invoices against goods received <u>and</u> passing to head office
- recording hours worked by each member of staff
- <u>emailing</u> financial details/hours worked to head office
- receive telephone calls from businesses for sandwich orders }take orders for
- writes down order on order form }deliveries
- obtain prices from cashier
- pass order to sandwich makers
- enter order details into spreadsheet
- use spreadsheet to create invoice
- post invoice to business
- <u>email</u> copy of invoice to finance manager

1 mark per point to max of 5 **[5]**

3 **(a)** **(i)**

- quantity of each ingredient in stock
- quantity where use-by date is about to expire

1 mark each **[2]**

(ii) stock check of ingredients carried out (1)
once a week (1)
by a member of kitchen staff (1)
identify quantity remaining (1)
check use-by date (on container) (1)
write down quantities (1)

1 mark per point to max of 3 **[3]**

(b) Any **three** of:

- calculates amount of usable stock
- compares with pre-set re-order level
- if quantity is less than or equal to re-order level
- uses knowledge of how much is likely to be needed

1 mark per point to max of 3 **[3]**

(c) Any **two** of:

- word processed order form
- lists ingredients and quantities
- printed out
- faxed to wholesaler

1 mark per point to max of 2 **[2]**

4 **(a)** Any **two** of

- client details obtained by catering assistant via telephone
- event details obtained by catering assistant via telephone
- entered in electronic diary
- catering manager visits client
- obtains exact requirements
- writes down requirements

1 mark per point to max of 2 **[2]**

(b) **(i)**

- menu
- quantity

1 mark per point to max of 2 **[2]**

(ii) Must match item

- menu – selected from drop-down list
- quantity – keyed in

1 mark per point to max of 2 **[2]**

(c) Any **four** of

- look up unit price of each menu
- multiply menu price by quantity
- calculate number of waiting and washing-up staff
- multiply number of staff by hourly rate and number of hours required
- add all prices to give sub-total
- calculate and add VAT

1 mark per point to max of 4

[4]

5 A description to a maximum of **10** from

hardware
- networked computer (1st) next to service counter (1)
- thermal printer (1st) for printing customer receipts(1)
- wireless router (1st) provides network connection (1) and broadband internet access (1)

software
- specially designed spreadsheet package (1st) holds details and prices (1) of all breads, fillings, drinks and other food items sold (1)

input data
- type of bread/filling /other items (1st) selected from drop-down lists (1)
- quantity (1st) entered by keyboard (1) if more than one of an item (1)
- amount of money tendered (1st) keyed in (by cashier) (1)

outputs
- order (1st) shown on screen (1) when on-screen button clicked (1)
- receipt (1st) printed when on-screen button clicked (1) handed to customer (1)
- summary sheet (1st) updated with details of sale (1) accessed by manager (1)
- change due (1st) shown on screen (1)

processes
- find price of each item (1st) from lookup table (1)
- add prices of bread and filling(s) (1st) to calculate price of sandwich (1)
- multiply sandwich/item price by quantity (1)
- add values to give total cost (1)
- subtract total from amount tendered (1st) to calculate change due (1)
- transfer details of sale (1st) to summary sheet (1)

To achieve maximum marks there must be at least one point from each section. **[10]**

6 (a) Any **two** possible weaknesses identified and explained
eg
- client must arrange meeting with catering manager (1) which may not be convenient for them (1)
- client may have to wait for a visit (1) because the catering manager is busy (1)
- catering manager handwrites details (1) may make errors writing them down (1) may have difficulty deciphering notes back at office (1) may make data entry error (1)
- client must wait for quotation to be posted (1) because catering manager must return to office to enter details and produce quote (1)

Up to 2 marks each to max of 4 **[4]**

(b) (i) Any **one** possible improvement identified and explained
eg
- provide catering manager with a laptop and portable printer (1) with database of details and costs of standard services installed (1) so that requirements can be entered at clients' premises (1)
- set up a website and online form (1) so that clients can enter requirements themselves and submit (1)

Up to 2 marks each to max of 2 **[2]**

(ii) Any **one** possible benefit identified and explained. Must be linked to the improvement in 6(b)(i)
eg
- clients do not have to wait for quotation to arrive by post (1) because catering manager could print it out on portable printer and leave it with customer/because quotation could be emailed in response to online request (1)
- less likelihood of errors in quotations (1) because no handwriting to interpret/catering manager can check details on-screen with client/client enters details themselves (1)
- clients do not have to wait for a visit from catering manager (1) because they can place the order themselves via the website (1)

Up to 2 marks each to max of 2 **[2]**

(iii) Any **one** possible problem identified and explained. Must be linked to the improvement in 6(b)(i)
eg
- portable equipment may be stolen/lost/damaged (1) so increased costs for insurance/replacement (1)
- security issues if equipment is lost or stolen (1) because it may contain clients' personal information (1)
- cost of setting up and maintaining a website (1) because will need to pay someone to design it (1) will need to employ someone to maintain it/need to pay for training of existing staff to maintain it (1)
- may still need to wait for catering manager (1) if client has special requirements (1)
- secure server will be needed (1) to prevent hacking /viruses (1)

Up to 2 marks each to max of 2 **[2]**

Section B

7 (a) A description that includes any **four** of

- select the products required (from on-line catalogue)
- select/enter quantity required
- review and amend order
- go to checkout screen
- enter contact details
- enter delivery address (if different)
- select delivery method
- check and confirm order
- enter payment card details
- confirm payment
- print invoice/order details

1 mark each to max of 4 **[4]**

(b) An explanation to a maximum of **six** from

Benefits

- company can sell to wider geographical area (1) increasing customer base (1)
- company may not need high street/high rent premises (1) reducing overheads (1)
- payment guaranteed at time of order (1) as card details provided (1)
- business can take place 24/7 (1) potentially increasing sales (1)
- easier to keep up-to-date (1) paper catalogues need to be reprinted (1)

Limitations

- cost of technical support / expertise (1) to maintain a secure web server (1)
- concern over security of card details (1) may deter customers from buying on-line (1)
- company may have to pay for return of goods (1) if goods do not meet customers' expectations (1) because customers can only see pictures of goods (1)
- need to update website frequently (1) cost of updating (1)

Max 6 – max 4 for benefits or limitations **[6]**

(c) Any **two** from

- Makes company the owner of the designs
- Only the company may <u>legally</u> copy, adapt and sell the designs
- Other people need permission to use the designs
- The company may charge
- The company can sue anyone who uses the designs without permission

1 mark per point to max of 2 **[2]**

8 (a) Any **two** impacts identified and explained from

- can work from home (1) because of reduced equipment costs/improved communication links (1)
- can work while travelling (1) because of mobile devices and communication technology (1)
- increased personal flexibility (1) because don't have to work 'office hours'/can work around family commitments (1)
- may lose motivation (1) because not directly supervised (1)
- increased motivation (1) because more comfortable working environment (1)
- may feel isolated (1) because of reduced social interaction at work (1)
- increased interaction with family and neighbours (1) because work can be organised around eg taking children to school (1)
- may become a workaholic (1) because of lack of distinction between work and leisure time (1)
- reduction in travel time/cost (1) so more leisure time / do not need to commute (1) more disposable income (1)
- technical problems may cause delays (1) because no-one on hand to fix /need to wait for engineer to fix (1)

2 marks each to max of 4 **[4]**

(b) Any **two** impacts identified and explained from

- possibility of hot-desking (1) so less workstations needed (1)
- possibility of smaller premises (1) reducing overheads/lower utility costs (1)
- will need to provide equipment for use at home/on the move (1) so high initial cost (1)
- still responsible for health and safety (1) so will need to carry out assessment of employees' home workstations (1)
- may need to pay for communication (and possibly contribute to cost of other utilities) (1) so increase in on-going costs (1)
- may need to provide incentives / harder to motivate (1) as no direct supervision (1)
- may be additional insurance costs (1) as employees' premises not as secure as employer's (1)

2 mark each to max of 4 **[4]**

G054 Software development

There are 100 marks available for this test. They are allocated as follows:

- Tasks 2, 3 and 4 30
- Section A of the test paper 50
- Section B of the test paper 20

Task 2 (15 marks)

12 marks available for Systems Flowchart (See Appendix 1)

1 mark available for identification of:
- Customer
- Admin (Office)
- Order system
- Warehouse

1 mark for each correct symbol with associated flows (Max 8)

Evaluation - 3 marks available

Mark	
1	Some comment on method(s) used to develop SFC
2	A strength/weakness in method(s) used identified
3	A strength and weakness in method(s) used identified

Task 3 (10 marks)

Any recognisable form of structured English is acceptable
1 mark for correct syntax
1 mark for all conditions given
1 mark for each correct condition/outcome (Max 8).

Get order details
CASE< ordered with shed = Y, number = 1>
Discount = 5%
CASE < ordered with shed = Y, number = 2 >
Discount = 7.5%
CASE < ordered with shed = Y, number = 3>
Discount = 10%
CASE < ordered with shed = Y, number = 4>
Discount = 12.5%
CASE < ordered with shed = Y, number = >5>
Discount = 15%
CASE < ordered with shed = N, number = 1>
Discount = 0% + £5.00
CASE < ordered with shed = N, number = 2>
Discount = 5% + £6.50
CASE < ordered with shed = N, number = 3>
Discount = 7.5% + £8.00
CASE < ordered with shed = N, number = 4>
Discount = 10% + £9.50
CASE < ordered with shed = N, number = >5>
Discount = 12.5% + £11.00
END CASE

Task 4 (5 marks)

1 mark each for (Max 5):

- Use of colour/font/white space
- Logical order of information on screen
- Identification of HS
- All data/information shown is appropriate (customer name, address, contact number, type of shed) with no omissions/extra data required
- Use of validation/drop down boxes/option boxes/radio buttons where appropriate
- Option for installation
- Option for accessories
- Delivery charge based on number of miles – drop down box or similar
- Discounts applied
- Total cost for order.

Section A

Note: HS = Hideaway Sheds

Question	Answer	Mark
1	**One of the purposes of the proposed system is to standardise the software used.** **Describe two other purposes of the new system.** *2 from:* To solve the problems caused by the current system (1) example of problems given (1) To improve communication (1) between head office and warehouse (1) To increase the security of information (1) held on the computers in head office (1) To produce reports for the owner (1) example of report (1).	**[4]**
2	**One of the user requirements defined by the owner of Hideaway Sheds is that there should be increased security.** **Describe two other user requirements that have been defined by the owner of Hideaway Sheds.** *2 from:* Produce a daily automatically generated report (1) for stock orders (1) Be able to access supplier details (1) through a unique supplier number (1) To keep records (1) of customers (1) To show the progress (1) of customer orders (1) To produce reports (1) defined by the owner (1).	**[4]**
3 **(a)**	**During the development of the feasibility study functional requirements are defined.** **Describe the functional requirement that has been defined by the staff who work in the warehouse.** User interface (1st) contains large buttons (1) and drop-down (option) lists (1) helpful error messages (1).	**[4]**
(b)	**Describe the defined functional requirements that relates to the customers and orders.** *3 from:* Keep records (1) of customers (1) who use HS (1) or have used HS(1) Show the progress (1) of each order (1).	**[3]**

<table>
<tr><th>Question</th><th>Answer</th><th>Mark</th></tr>
<tr><td>4

(a)</td><td>During the development of the feasibility study process constraints should be considered.

Describe the software constraint that has been defined by the owner of Hideaway Sheds.

The vendor/s (1st) of the operating system/applications software (1) to be kept the same (1).</td><td>[3]</td></tr>
<tr><td>(b)</td><td>(i) Identify one other process constraint, apart from budget and hardware, that has been defined by Hideaway Sheds.

Time (1) Correct answer only.</td><td>[1]</td></tr>
<tr><td></td><td>(ii) Describe how this has been defined by Hideaway Sheds.

2 from:

System must be implemented (1st) over the Easter Bank Holiday weekend (1) to keep disruption to a minimum (1).</td><td>[2]</td></tr>
<tr><td>5</td><td>Describe the problems, caused by the current system at Hideaway Sheds, which are having a direct impact on the customers.

6 from:

Stock records (1st) not always up-to-date (1)
Stock orders (1st) are inaccurate (1)
Wood needed to build the sheds (1st) not always in stock (1) sheds cannot be built (1) delivered late to customers (1)
Accessories not always in stock (1st) deliveries incomplete (1).</td><td>[6]</td></tr>
<tr><td>6</td><td>During the life of the system it may be necessary to carry out maintenance.

Explain, using examples relating to Hideaway Sheds, the different types of maintenance strategies that can be used.

<table>
<tr><th>Band</th><th>Mark Range</th><th></th></tr>
<tr><td>H</td><td>9 – 12</td><td>Candidates will show a clear understanding of the question and include detailed explanations of a range of different types of maintenance strategies.

Examples will relate to HS.

The information will be presented in a structured and coherent form. There will be few if any errors in spelling, grammar and punctuation. Technical terms will be used appropriately and correctly.</td></tr>
</table>
</td><td></td></tr>
</table>

<table>
<tr><th>Question</th><th>Answer</th><th>Mark</th></tr>
<tr><td></td><td>
<table>
<tr><td>Band</td><td>Mark Range</td><td></td></tr>
<tr><td>M</td><td>5 – 8</td><td>Candidates will show an understanding of the question and include descriptions of a range of different types of maintenance strategies with limited explanations.

Some examples given relate to HS.
The information will be presented in a structured format. There may be occasional errors in spelling, grammar and punctuation. Technical terms will be mainly correct.</td></tr>
<tr><td>L</td><td>0 – 4</td><td>Candidates will demonstrate a limited understanding of the question. Information may be a list of points, with little or no explanations.

Examples, if given, may not relate to HS.

Information will be poorly expressed and there will be a limited, if any, use of technical terms. Errors of grammar, punctuation and spelling may be intrusive.</td></tr>
</table>
</td><td></td></tr>
<tr><td></td><td>0 marks for no response or no response worthy of credit.

Responses may include:
Adaptive – occurs when HS has a need that the system must fulfil. Owner already concerned about the impact of delivery charges/fuel price increases. Also considering expanding the function of HS to increase stock range.

Perfective – enhances the system, usually done at the request of the users/HS Does not change the overall functionality of the system. Can add features to assist users, such as a macro to print a report, change in corporate style.

Corrective – also known as remedial maintenance, carried out if reports not as required, doesn’t process data as required or specified. For example, HS may need different time scales in reports Can be completed through use of a patch issued by developers to HS.

Preventative – attempts to solve problems before they occur. By completing this, the new system at HS will have the shelf-life extended. For example by adding routines in place to be run automatically, virus checking of emails, disc scans, automatic back-up routines, centralised back-ups completed at a given time schedule.</td><td>[12]</td></tr>
</table>

Question	Answer	Mark
7	An increased number of staff may be using the new system. **(i) Identify the Act that relates to the lay-out of the staff workstations.** Health and Safety at Work Act (1974) (1) Correct answer only.	**[1]**
	(ii) Explain the implications of the Act to Hideaway Sheds. *6 from:* *For example:* Workstations need to be ergonomically set-up (1) Chairs must be adjustable (1) Screens/monitors should not be positioned too far away from eyes (1) Lights should not produce a glare on the screens/monitors (1) Equipments such as mouse mats/foot rests should be provided (1) Equipment provided should be fit for purpose (1) Regular breaks should be scheduled (1) Eye tests paid for (1) Risk assessments should be carried out (1).	**[6]**
8	**The increased security of the data and information held on the computers at Hideaway Sheds has been defined as one of the user requirements.** Describe two physical security measures that could be used by Hideaway Sheds. *2 from, max 2 per measure for example* Locks on doors/windows (1st) only authorised people/owner has keys limiting access (1) Cages/locks on computer (1st) to prevent theft (1) Back-ups held off-site (1st) can be used in case of emergency (1) Blinds at windows (1st) limits how much can be seen when offices are closed (1) CCTV cameras (1st) can video/live stream what is happening (1).	**[4]**

Section B

Question	Answer	Mark
9	**Following the development and implementation of a new system, user documentation is passed to the end-user.** **Explain how the following pieces of documentation may be used at a future time in the life of the system.** **version details** *2 from:* To ensure most up-to-date version is used (1) to be able to track changes (1) made through different versions (1).	**[2]**
	detailed program specifications *3 from:* If maintenance needed after the implementation of the system (1) the developer would be able to see how the software was constructed (1) It is very unlikely that the developer doing the maintenance (1) would be the same (1) as that who developed the system initially (1).	**[3]**
10 **(a)**	**During the design of a new system a physical design specification is developed.** **Identify two components of the input specification part of the physical design specification.** *2 from:* Data sources (1) Validation methods (1) Methods of data capture (1) Verification methods (1) Data input forms (1) Input screen layouts (1). *This question on the question paper contained an error. It asked candidates to identify three components, however only contained space for two answers. This was dealt with at standardisation and no candidates were disadvantaged as a result.*	**[2]**

Question 11 — **Mark: [6]**

A software solution is being developed for an insurance company. The software solution needs to automatically select and archive documents.

A document that was created more than 18 months ago and has not been accessed within the last 6 months is to be archived. Draft documents do not need to be archived.

Produce a decision table to specify the processing required.

6 from:

1 for correct combination of rules
1 for correct actions
} must be linked

Draft document (1)
>18 months? (1)
Accessed in last 6 months? (1)
Archive, leave (1)

	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7	Rule 8
Conditions								
Draft	Y	Y	Y	Y	N	N	N	N
>18 months	Y	Y	N	N	Y	Y	N	N
Accessed in last 6 months?	Y	N	Y	N	Y	N	Y	N
Actions								
Archive						X		
Leave	X	X	X	X	X		X	X

Question 12

Evaluate the use of decision tables as a tool in the systems life cycle.

Band	Mark Range	
H	6 – 7	Candidates will show a clear understanding of the question and include **detailed** explanations of the advantages **and** disadvantages of the use of decision tables. Candidates provide a conclusion clearly justifying the use of decision tables as a tool in the systems life cycle. The information will be presented in a structured and coherent form. There will be few if any errors in spelling, grammar and punctuation. Technical terms will be used appropriately and correctly.

<table>
<tr><th>Question</th><th>Answer</th><th>Mark</th></tr>
<tr><td></td><td>
<table>
<tr><td>M</td><td>3 – 5</td><td>Candidates will show an understanding of the question and include explanations of the advantages and disadvantages of the use of decision tables. Explanations may be limited.

Candidates provide a conclusion relating to the use of decision tables as a tool in the systems life cycle. There may be limited scope.

The information will be presented in a structured format.

There may be occasional errors in spelling, grammar and punctuation. Technical terms will be mainly correct.</td></tr>
<tr><td>L</td><td>0 – 2</td><td>Candidates will demonstrate a limited understanding of the question.

Information may be a list of advantages or disadvantages, with little or no explanations.

Information will be poorly expressed and there will be limited, if any, use of technical terms.

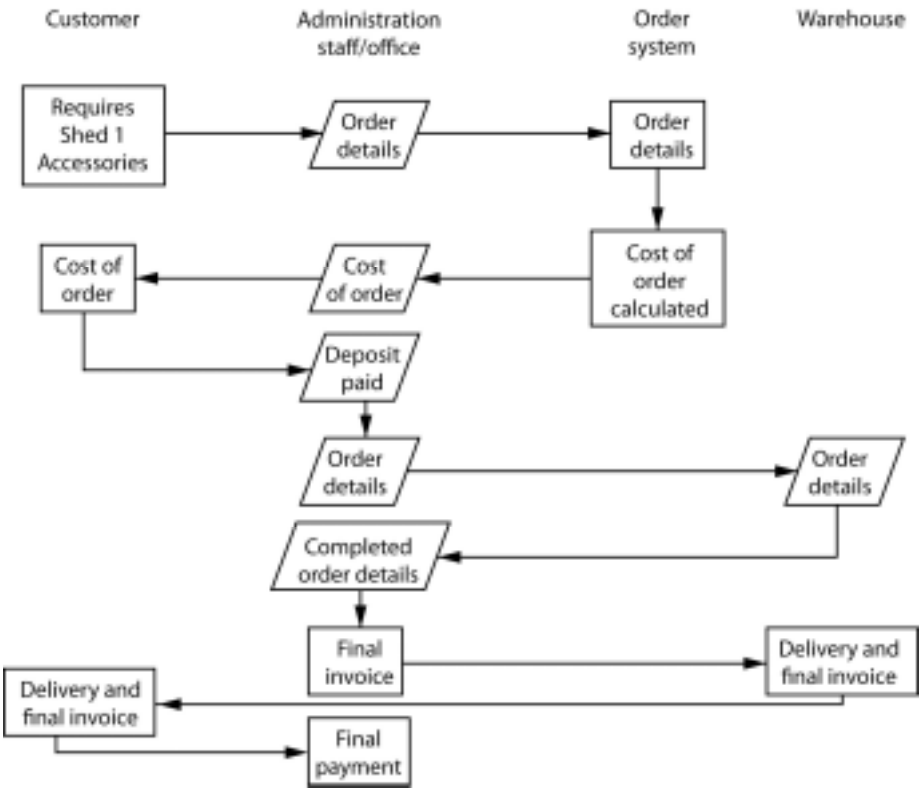
Errors of grammar, punctuation and spelling may be intrusive.</td></tr>
</table>
</td><td>7</td></tr>
<tr><td></td><td>Responses may include:

Description
Very simple method of showing actions that take place under given rules shows conditions/rules/actions covers all/unique combinations.

Advantages
All combinations of rules have to be considered easy to see if all rules have been identified. Standard layout is defined all levels of end-users can understand the information.

Disadvantages
If many rules defined may be difficult to ensure correct combinations.
May lead to redundancy tow or more rules may exist with the same actions required.</td><td></td></tr>
</table>

Appendix 1


Customer
Administration staff/office
Order system
Warehouse
Requires Shed 1 Accessories
Order details
Order details
Cost of order
Cost of order
Cost of order calculated
Deposit paid
Order details
Order details
Completed order details
Final invoice
Delivery and final invoice
Delivery and final invoice
Final payment

G055 Networking solutions

There are 100 marks available for this test. They are allocated as follows:

- Tasks 2 and 3 30
- Section A of the test paper 50
- Section B of the test paper 20

TASK 2

DIAGRAM

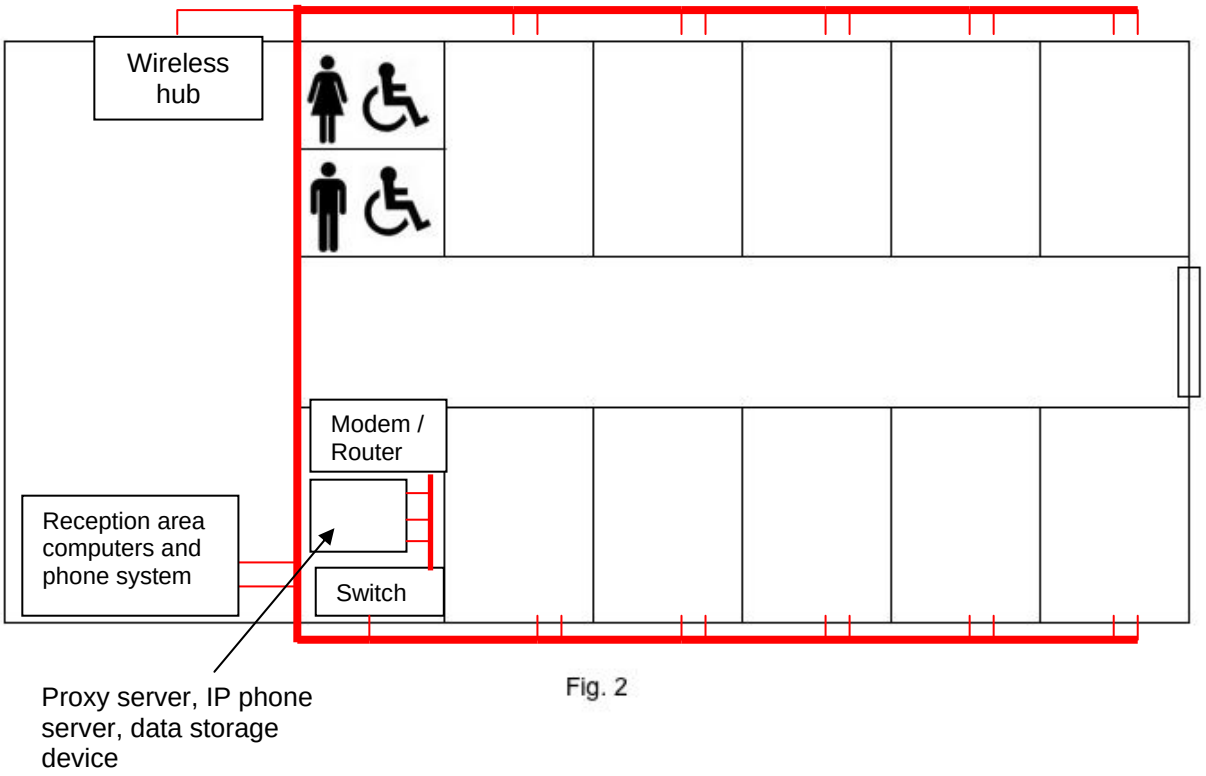


Fig. 2

1 mark for a correct diagram (contains a connecting device and cabling going to each room).

1 mark for everything shown as connected (all devices in ICT room connected to connecting device, wireless hub connected, all rooms and devices connected).

1 mark for cabling placed sensibly/safely.

Maximum 3 marks for diagram

TABLE

Hardware devices – 1 mark for each device from the list below on the diagram and in the table and up to 2 marks for justification for each. Up to a maximum of 5 devices.

Hardware device (on diagram)	**Justification**
Modem/router	To form connection to the internet (1) To share the connection between users (1)
Data storage device/file server	To provide data storage for all users (1) With access over the network (1)
Proxy server	To provide more secure (1) and efficient (1) access to WWW
Wireless hub/router/access point	To provide wireless internet access (1) for visitors to the building (1)
Phone server	To provide IP phone services (1) for all phone sockets in the building (1)
Switch	To connect all areas together (1) provides fast and secure connection to the servers (1)
Reception area computers / phone system	To provide network telephone reception services (1) for all offices (1)
Cabling (UTP, STP, Fibre)	To provide the physical connection (1) between office network ports and connecting device (1)
Connectors (must match cable)(accept wall jack/patch panel)	To terminate cable (1) to form connection between cable and port (1) wall jack/patch panel only – keep cabling tidy (1)

Maximum 15 marks for table

EVALUATION

Band	**Criteria**	**Marks**
L	Some comment is made on the methods(s) used (1)	1
M	A strength OR a weakness in the method(s) used is identified	2
H	A strength AND a weakness in the method(s) used are identified	3

Maximum 3 marks for evaluation

TASK 3

Band	Criteria	Marks
L	One or two protocols and their use are identified. Written work may contain a number of errors.	1-3
M	Protocols and their uses are identified. Suitability is described for some protocols. Written work may contain a few errors.	4-6
H	There is appropriate description of the suitability of most identified protocols and their uses. Work contains very few or no errors.	7-9

Protocols	Uses	Suitability
TCP	Communication between hosts Used internally and on internet	Allow internet access for businesses Guaranteed delivery between host on network
IP	IP address allocated Used to identify individual phones or workstations	Suitable for internet IP phone services require it
NetBIOS	Installed on all workstations for local connection	Runs with TCP Suitable for networks with internet access
FTP	File sharing Uploading web pages	Required for small businesses requiring FTP access
UDP	Communication between hosts Used for file streaming, e.g. VOIP	Suitable for internet use Guaranteed delivery of streamed data Required for IP Phone system
SIP	Controlling IP sessions for voice and video calls	Suitable for multiple media streams Allows for many calls at once on IP telephone system

SECTION A

1 **(a)** One mark for a point and one for expansion of any of:

- Can share web pages during development (1) between users on the network (1)
- Better communication (1) using email (1)
- Can share expensive hardware (1) such as scanners/printers (1)
- Can share the internet access point (1) to upload the final pages (1)
- Can share expensive software (1) such as web authoring/graphics (1)

[2]

(b) One mark for a point and one for expansion of any of:

- Needs management (1) NWS will have to provide this themselves (1)
- Extra cost (1) of purchasing network equipment (1)
- Reduced security within NWS (1) due to network sharing (1)

[2]

2 One mark for each correctly identified connector up to max 2.
Up to 2 marks for each description of suitability, one mark for point and one for expansion, up to max 4 marks.

Transmission Media	Connector	Why suitable
Unshielded Twisted Pair cable	RJ-45	Speed (1) up to 1Gbps (1) Flexible (1) easy to fit round walls (1) Small (1) fits easily in trunking (1) Covers required distance (1) up to 100m (1)
Wireless	Wireless network adapter/wireless access point/wireless hub/wireless router	Flexible (1) connections can be made anywhere within range (1) Covers required distance (1) up to 70m (1) Easy to set up and maintain (1) no cabling required (1)

[6]

3 One mark for function and one for expansion of any of:

File Server
Provides central storage of files (1) for NWS users (1)
Sends files to clients (1) when requested (1)
Stores files for clients (1) when requested (1)
Authenticates users (1) before giving access to files (1)
Blocks access to files (1) to users other than those at small business (1)
Manages access to files (1) to ensure only updated by one user at a time (1)

Network printer
Connected to small business network (1) to be shared (1)
Visible on network (1) to all workstations on that network (1)
Can be controlled centrally (1) by the main server computer (1)
Each workstation can control its own access (1) to the printer's queue (1)

Switch
Provides a connection point (1) for all cabled network devices within the office (1)
Provides a connection point (1) between small business network and main network access point (1)
Forms a physical connection (1) between two devices (1)
Receives data from one device (1) and forwards it to the destination device (1)
Can be programmed (1) to segment the network (1)

[6]

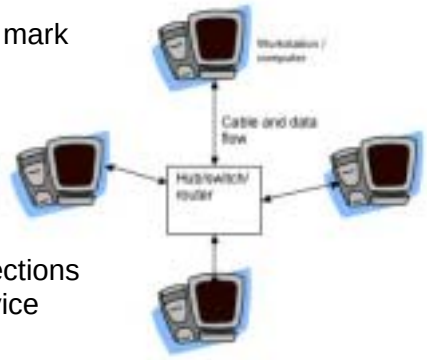
4 Any three marks from each:

Anti-virus
Runs at regular intervals (1) and/or scans incoming files (1) scans to find viruses (1) must be updated regularly (1) to take account of new viruses (1) installed on all computers (1)

Firewall software
Programmed to block named IP addresses (1) or those not currently known (1) inspects all data (1) verifies source of data (1) set to block unauthorised access (1) set to block access to particular websites (1)

Max 3 marks for each type of software **[6]**

5 **(a)** Standard star topology diagram – 1 mark



Label showing data flow in both directions between computers and central device – 1 mark

One mark for suitable connecting device (hub/switch/router):

One mark for a further label from:
Workstation/computer
Cable

[4]

(b) 1 mark for any of the following up to max 2 marks.

All data travels through the central device (1)
A small business network sends its data to the hub/switch/router (1)

EITHER
The switch or router inspects the data for the destination address of the storage device (1)
The switch or router sends the data to the destination address of the storage device (1)
OR
The hub broadcasts the data to all addresses, the storage device accepts the data (1)

[2]

(c) 1 mark each for up to 3 statements of suitability including:

One of:

- Suitable because a star network would be easy to set up
- Suitable because a star network can be easily expanded if necessary
- Suitable because if the connection to one business fails the others are unaffected

Plus one of:

- Not suitable because a star network would be too slow for the number of connections required at the Centre
- Not suitable because if the central device stops working the network fails for all small businesses

Plus a further one from either section.

Max 3 marks **[3]**

6 (a) One mark each for any of:

- a central server would control access to the network (1)
- a server would provide network services such as file sharing (1)
- users' workstations would request services from the server (1)
- users' workstations would not provide services (1)
- NWS' data would be kept centrally on a file server (1)
- NWS' data could be accessed from any workstation if a username and password are supplied (1)
- NWS' data and security can be centrally managed (1)

[3]

(b) 1 mark each for up to 3 statements of suitability including:

One of:

- Suitable if most of NWS' work is shared rather than independent
- Suitable if NWS require a lot of file or resource sharing
- Suitable for NWS because security can be centrally managed
- Suitable for NWS because access to files can be centrally managed
- Suitable for NWS because if one workstation breaks down, another can be used

Plus one of:

- Unsuitable as NWS has limited funds
- Unsuitable as NWS would not be able to employ a network manager
- Unsuitable as too dependent on server

Plus a further one from either section.

Max 3 marks **[3]**

7 (a) One mark each for any **two** of:

- The overall channel width is divided by the number of users to allow simultaneous data transfer along the same cable (1)
- A broadband channel is divided into frequency bands to make a number of separate smaller channels (1)
- A broadband channel has enough frequencies to enable sharing (1)
- A router forwards traffic to correct computer by IP address (1)

[2]

(b) One mark each for any **two** of:

- Slows down (1)
- Each user will wait longer (1)
- Each user will have less bandwidth (1)
- Bandwidth will reduce with each new connection (1)

[2]

(c) One mark for correct answer – 0.5 seconds
One mark for correct calculation:

File size = 512KB = 512*1024*8 bits
Transfer speed = 8Mbps = 8 * 1024 * 1024 bits per second

512 * 1024 * 8 / 8 * 1024 * 1024 = 0.5 seconds

[2]

8

Band	Criteria	Marks
L	One or more methods and equipment are identified and a brief description of how the method(s) work are given.	1-3
M	A relevant set of equipment, a description of how it works and a statement of suitability is given for at least one method. At least two separate methods, equipment and how each works are identified.	4-5
H	A relevant set of equipment, how it works and a statement of suitability are given for at least two methods.	6-7

Internet services	Equipment	How it works	Suitability
DSL	DSL connection. DSL modem and router or modem/router.	Transmits data at high speed in both directions. The modem translates signals between those on the local network and those on the DSL. The router deals with ensuring that the data goes to the correct computer.	Small businesses are likely to upload as much as download and so equal speed in both directions is desirable. Quite suitable.
ADSL	ADSL connection. ADSL modem and router or modem/router	Transmits data at high speed in one direction and low speed in the other. The modem translates signals between those on the local network and those on the ADSL. The router deals with ensuring that the data goes to the correct computer.	Small businesses are likely to upload as much as download and so the inequality in speeds might cause a problem. Less suitable.
ISDN	ISDN line. ISDN adapter. Router	Transmits data at high speed in both directions on a special digital telephone connection. The modem translates signals between those on the local network and those on the ISDN network. The router deals with ensuring that the data goes to the correct computer.	Cost of leasing ISDN lines might be prohibitive meaning that rents might be higher. Less suitable.
Cable	Cable connection. Cable modem and router or cable modem/router.	Transmits data at high speed in both directions over the cable television network. The modem translates signals between those on the local network and those on the cable network. The router deals with ensuring that the data goes to the correct computer.	Only available in certain areas. More suited to home use, much of bandwidth used for TV broadcasting. Speeds unsuitable for business use. May not be available.

[7]

SECTION B

9 One mark for point and one for expansion of any two of:

- Adequate workspace (1) to reduce stress (1)
- Height of desk (1) to reduce risk of back problems (1)
- Adjustable chair (1) to reduce the risk of back problems (1)
- Ergonomic keyboard (1) to reduce the risk of RSI (1)
- Adequate distance from screen (1) to reduce risk of eyestrain (1)
- Ability to lock workstation (1) to take breaks (1)
- Screen positioned to eliminate glare (1) to reduce risk of eye strain (1)
- Adequate lighting (1) to reduce risk of eye strain (1)

[4]

10 HTTP (1st)

One mark for point and one for expansion of any one of:

- Uses URLs (1) to locate web pages (1)
- Receives pages as hypertext (1) translates them into graphical images (1)
- Interprets hyperlinks (1) to request new pages (1)
- Used between browser and server (1) as standard for communication (1)

[3]

11 **(a)** One mark each for any three of:

- Secure, private data transfer over the internet
- Point to point connections between hosts
- Data transfer only by authorised users
- Operated by software alongside the NOS which acts like a firewall
- Can be set up using VPN hardware acting like a hardware firewall
- Users see a direct connection rather than a connection to the internet

[3]

(b) Any one of:

- Where an organisation wants to transfer data securely (1) over the internet (1)
- For limited outside access (1) to transferred data (1)
- Where a WAN is needed (1) on a limited budget (1)

[2]

12 One mark each for up to three of:

- One destination isn't receiving
- Files from anywhere do not reach 168.124.30.02
- Files of all sizes do not reach 168.124.30.02
- Files of all types do not reach 168.124.30.02
- The problem is with the receiver not the senders
- The problem has been happening during the entire time of this section of log

[3]

13 **(a)** One mark for point and one for expansion of any of:

- Collection of web resources (1) accessible over the internet (1)
- Accessed by username and password (1) limited only to staff (1)
- Accessed by web browser (1) using a secure protocol (1)

[2]

(b) One mark each for any three of:

- Remote access to shared files (1)
- Access college resources from home (1)
- Update online resources remotely (1)
- Same resources at work and home (1)
- Access student data remotely (1)

[3]

Grade Thresholds

GCE Applied ICT (H115/H315/H515/H715)

January 2010 Examination Series

Coursework Unit Threshold Marks

Unit		Maximum Mark	A	B	C	D	E	U
G040	Raw	50	43	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G042	Raw	50	43	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G043	Raw	50	43	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G044	Raw	50	43	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G045	Raw	50	43	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G046	Raw	50	43	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G047	Raw	50	43	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G048	Raw	50	43	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G049	Raw	50	44	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G050	Raw	50	44	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G051	Raw	50	44	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G052	Raw	50	44	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G053	Raw	50	44	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G056	Raw	50	44	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G057	Raw	50	44	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G058	Raw	50	44	38	33	28	23	0
	UMS	100	80	70	60	50	40	0
G059	Raw	50	44	38	33	28	23	0
	UMS	100	80	70	60	50	40	0

Examined Unit Threshold Marks

Unit		Maximum Mark	A	B	C	D	E	U
G041	Raw	100	75	67	60	53	46	0
	UMS	100	80	70	60	50	40	0
G054	Raw	100	68	61	54	47	41	0
	UMS	100	80	70	60	50	40	0
G055	Raw	100	68	60	53	46	39	0
	UMS	100	80	70	60	50	40	0

Specification Aggregation Results

Uniform marks correspond to overall grades as follows.
Advanced Subsidiary GCE (H115):

Overall Grade	A	B	C	D	E
UMS (max 300)	240	210	180	150	120

Advanced Subsidiary GCE (Double Award) (H315):

Overall Grade	AA	AB	BB	BC	CC	CD	DD	DE	EE
UMS (max 600)	480	450	420	390	360	330	300	270	240

Advanced GCE (H515):

Overall Grade	A	B	C	D	E	U
UMS (max 600)	480	420	360	300	240	0

Advanced GCE (Double Award) (H715):

Overall Grade	AA	AB	BB	BC	CC	CD	DD	DE	EE
UMS (max 1200)	960	900	840	780	720	660	600	540	480

Cumulative Percentage in Grade

Advanced Subsidiary GCE (H115):

A	B	C	D	E	U
1.8	14.5	37.7	69.6	90.4	100
There were 457 candidates aggregating in January 2010.					

Advanced Subsidiary GCE (Double Award) (H315):

AA	AB	BB	BC	CC	CD	DD	DE	EE	U
0	0	0	16.7	25	41.7	50	66.7	91.7	100
There were 27 candidates aggregating in January 2010.									

Advanced GCE (H515):

A	B	C	D	E	U
1.9	15.1	34	79.2	96.2	100
There were 56 candidates aggregating in January 2010.					

Advanced GCE (Double Award) (H715):

AA	AB	BB	BC	CC	CD	DD	DE	EE	U
0	0	10	20	30	40	50	50	50	100
There were 9 candidates aggregating in January 2010.									

For a description of how UMS marks are calculated see:
http://www.ocr.org.uk/learners/ums/index.html

Statistics are correct at the time of publication.

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