

Information & Communication Technology

Advanced GCE A2 7838

Advanced Subsidiary GCE AS 3838

Mark Schemes for the Units

June 2007

3838/7838/MS/R/07

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All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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**Mark Scheme 2512
June 2007**

INSTRUCTIONS ON MARKING SCRIPTS

All page references relate to the Instructions to Examiner booklet (revised June 2006)

For many question papers there will also be subject or paper specific instructions which supplement these general instructions. The paper specific instructions follow these generic ones.

1 Before the Standardisation Meeting

Before the Standardisation Meeting you must mark a selection of at least 10 scripts. The selection should be drawn from several Centres. The preliminary marking should be carried out **in pencil** in strict accordance with the mark scheme. In order to help identify any marking issues which might subsequently be encountered in carrying out your duties, **the marked scripts must be brought to the meeting.** (*Section 5c, page 6*)

2 After the standardisation meeting

- a) Scripts must be marked in **red**, including those initially marked in pencil for the Standardisation Meeting.
- b) All scripts must be marked in accordance with the version of the mark scheme agreed at the Standardisation Meeting.
- c) **Annotation of scripts**

The purpose of annotation is to enable examiners to indicate clearly where a mark is earned or why it has not been awarded. Annotation can, therefore, help examiners, checkers, and those remarking scripts to understand how the script has been marked.

Annotation consists of:

- the use of ticks and crosses against responses to show where marks have been earned or not earned;
- the use of specific words or phrases as agreed at standardisation and as contained in the final mark scheme either to confirm why a mark has been earned or indicate why a mark has not been earned (eg indicate an omission);
- the use of standard abbreviations eg for follow through, special case etc.

Scripts may be returned to Centres. Therefore, any comments should be kept to a minimum and should always be specifically related to the award of a mark or marks and be taken (if appropriate) from statements in the mark scheme. General comments on a candidate's work must be avoided.

Where annotations are put onto the candidates' script evidence, it should normally be recorded in the body of the answer or in the margin immediately adjacent to the point where the decision is made to award or not award the mark.

d) Recording of marking: the scripts

- i) Marked scripts must give a clear indication of how marks have been awarded, as instructed in the mark scheme.
- ii) All numerical marks for responses to part questions should be recorded unringed in the right-hand margin. The total for each question (or, in specified cases, for each page) should be shown as a single ringed mark in the right-hand margin at the end of each question.
- iii) The ringed totals should be transferred to the front page of the script, where they should be totalled.
- iv) Every page of a script on which the candidate has made a response should show evidence that the work has been seen.
- v) Every blank page should be crossed through to indicate that it has been seen. (*Section 8a – d, page 8*)

e) Handling of unexpected answers

The standardisation meeting will include a discussion of marking issues, including:

- a full consideration of the mark scheme in the context of achieving a clear and common understanding of the range of acceptable responses and the marks appropriate to them, and comparable marking standards for optional questions;
- the handling of unexpected, yet acceptable answers. (*Section 6a, bullet point 5, page 6*)

There will be times when you may not be clear how the mark scheme should be applied to a particular response. In these circumstances, a telephone call to the Team Leader should produce a speedy resolution to the problem. (*Appendix 5, para 17, page 26*)

The Awarding of Marks for Written Communication

Marks are awarded for the use of accurate spelling, punctuation and grammar according to the following criteria.

| | | Marks |
|------------------------------------|--|-------|
| Below Threshold Performance | | 0 |
| Threshold performance | Candidates spell, punctuate and use the rules of grammar with reasonable accuracy; they use a limited range of specialist terms appropriately. | 1 |
| Intermediate performance | Candidates spell, punctuate and use the rules of grammar with considerable accuracy; they use a good range of specialist terms with facility. | 2–3 |
| High performance | Candidates spell, punctuate and use the rules of grammar with almost faultless accuracy, deploying a range of grammatical constructions; they use a wide range of specialist terms adeptly and with precision. | 4 |

The marks will be awarded on an impression basis and will reflect the candidate's performance in the paper as a whole.

Rule of thumb



- 0 Award only in rare circumstances eg no written work or minimal, which is not in sentences and is spelt incorrectly, without use of appropriate technical terms.
- 1 Questions answered using statements or single words only.
- 2 Candidates use some sentences and some technical words. Some errors in grammar and spelling.
- 3 Candidates use sentences correctly, with few errors in grammar. Some technical words used appropriately and with limited spelling errors.
- 4 Almost perfect use of grammar, technical vocabulary and spelling.

- 1 (a) (i) Describe what is meant by the term information.

Any two from:

Data with meaning (1)

Processed data (1)

Information = data + meaning + structure (1)/+ context (1)

[2]

- (ii) Describe the difference between information and knowledge.

Any two from:

Knowledge is applied information (1)

Information is facts (1), knowledge can be opinions/probabilities (1)

Knowledge might be wrong (1)

Knowledge is understanding the information (1)

Knowledge is based on rules(1)

Information does not change(1)

Knowledge can change based on additional information (1)

[2]

- (b) Describe two costs incurred in producing the brochures.

Identify costs for one and description for second:

Hardware:

Purchase of printer (1) required to produce output (1)

Purchase of computer (1) to produce leaflet (1)

Purchase of desks (1) to conform to health and safety (1)

Software:

Purchase of program (1) to create leaflet (1)

Training for software (1) to know how to use it (1)

Updates for software (1) to remove bugs (1)

Manpower:

Wages/employ new person (1) new job (1)

Cover required (1) when on training courses (1)

Consumables:

Purchase of copyright/photos (1)

For inclusion in brochure (1)

Ink (1) for printing (1)

Electricity bill (1) use of computers (1)

Paper (1) to print on (1)

Insurance (1) of hardware (1)

Maintenance contract (1) keep the system running (1)

NOT printing costs

[4]

- 2 (a) Describe the difference between hardware and software, giving examples of each to illustrate the description.

Two for examples of hardware and software, two for difference:

Hardware:

Can touch/physical (1)

Example eg monitor/keyboard/mouse (1)

Software:

Program/instructions/code (1)

Example eg OS/word processor/spreadsheet

(not proprietary) (1)

[4]

- (b) Identify two hardware upgrades and one software upgrade that could be carried out to improve the performance of the computers.

Any two for hardware and one for software, no carry through:

Hardware:

More RAM (1)

Faster/larger Hard drive (1)

Faster/different processor (1)

Additional processor(1)

Increase bus size(1)

Software:

Disk defragmenter (1)

Delete files (1)

Use software tools (eg anti virus/anti spam) (1)

Install newer/different version of software (1)

NOT compression software

[3]

- (c) Give an appropriate example of use that the travel company would make of each output device.

One mark each, examples:

Plotter – printing maps/routes (1)

– producing large documents ie architect's drawing/ A1 poster(1)

– recording temperatures in the bush (1)

[2]

NOT plotting

Projector – showing videos to customers (1)

- 3 (a) Identify appropriate data types for the following fields in the database:

Three from:

| Field Name | Data type |
|---------------------------|---|
| Customer ID | Auto number/Integer/ Text/Alphanumeric/Number/ String (1) |
| Customer Postcode | Text/Alphanumeric/String (1) |
| Customer Telephone Number | Text/Alphanumeric/String (1) |

[3]

- (b) (i) Identify two different validation methods that could be applied to a date of birth field.

Two from:

Length check (1)

Type check (1)

Range check (1)

Presence check (1)

Format check/Input mask/picture check (1)

Lookup check (1)

[2]

- (ii) Describe how a check digit is used to validate the credit card number.

Two from:

Algorithm applied to number to generate check digit (1)

Compared to check digit on card (1)

Example (2)

[2]

- (c) The credit card number is taken from the customer for payment. The number is checked to see if it is valid and the amount deducted from the total. A receipt is printed and given to the customer.

Draw a diagram of the above process showing the input, process, storage and output.

One from each section to a maximum of four:

Must be under correct headings

Input:

Credit card number (1) NOT details

Amount (1)

Process:

Number checked (1)

Amount deducted from total (1)

Storage:

New total stored (1)

Original amount stored (1)

Deposit stored (1)

Output:

Receipt printed (1)

Error message printed (1)

[4]

- 4 (a) Describe two other types of user interface the laptop might have.

One mark for identifying interface, second for description:

Direct manipulation (1) reflects physical actions (1)
Natural Language (1) spoken or written / everyday speak (1)
Command Line (1) typed commands /prompt (1)
Forms (1) prompts for input (1)
Menu (1) lists or related items (1) (NOT as part of WIMP)

[4]

- (b) Apart from the user guide, identify two items of supplementary user documentation that would come with the laptop. For each item of supplementary user documentation identified, state its purpose.

One for identification, second for purpose eg:

Quick start guide (1) to show how to immediately start using the system (1)
Health and Safety guide (1) to show how to use the system without injuring yourself (1)
Warranty (1) so you know what to claim for (1)
Glossary (1) understand specific technical terms (1)
Product key (1) to prove you own the licence (1)
Tutorial/demonstration (1) to know how to complete specific actions (1)
Troubleshooting (1) to know what to do when things go wrong (1)

[4]

- (c) What is the purpose of a driver?

One from:

To allow the OS to talk to the hardware (1)
Interface between hardware devices (1)
NOT allow the hardware to work

[1]

- (d) What is the purpose of a configuration file?

One from:

File that contains parameters to tell the hardware how it is to run (via driver) (1)
Needed to configure the hardware for the particular situation it is placed in (1)

[1]

5 (a) (i) Describe what is meant by a relational database.

Two from:

Tables (more than 1 table) (1)

connected together by use of primary / foreign keys (1)

[2]

(ii) Describe what is meant by a flat file database.

Two from:

Single table (1)

No links to other tables(1)

[2]

(b) Describe two advantages of using a relational database instead of a flat file database to store the data about safaris, customers and bookings.

One for identification, second for description:

Data integrity (1) – one copy of the data means it will not lose integrity (1)

Referential integrity (1) – no orphans/unlinked data (1)

No data duplication (1) – one copy of the data means that less volume is required (1)

Data independence (1) – data is separate from application and can have many users (1)

Cross table queries (1) – data can be drawn from any related table (1)

Cascade updates (1) – change data in fields automatically updates linked fields (1)

Access rights (1) – different access rights can be applied to different tables (1)

[4]

(c) Give two reasons why different access levels are required.

Two from:

To protect information (1)

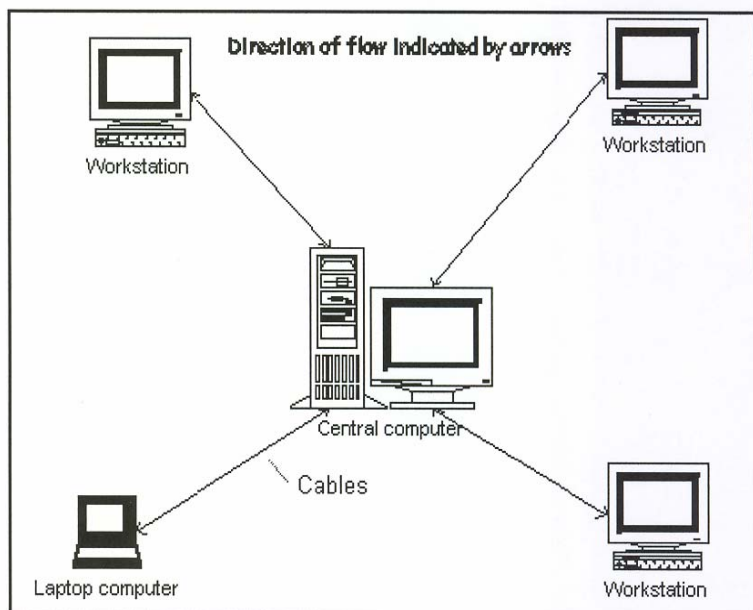
To comply with the law/DPA (1)

Some information is more confidential than others (1)

Different levels in the company (1)

[2]

6 (a) Draw and label a diagram of a star network.



No diagram = 0 marks

No labels = 0 marks

Not a star = 0 marks

Must have:

Labelled Star diagram (1)

Two from, labelled:

Workstation/computer/node/PC/laptop (1)

Direction of flow (1)

Cables/wireless (1)

Shared peripherals (1)

Hub/switch/Server/ central computer (1) – allow if in centre

[3]

(b) Describe the function of the protocol.

Two from:

To allow the two devices to communicate/ transfer data (1)

Sets maximum/minimum speeds/error checking (1)

[2]

(c) Identify two features of a WAN.

Two from:

Geographically remote (1) (only allow large distance if quantified)

Uses telecommunications facilities/satellites (1)

Connected by third party cables(1)

[2]

- 7 (a) **Compare email and video conferencing for making reports about the safaris.**

2 marks per comparison eg

Video conferencing is more personal because you can see the individual (1) whereas with email you can only read (1)

Video conferencing requires higher band width because live video is being sent (1) whereas email uses low bandwidth because it is not time sensitive (1)

Video conferencing requires all individuals to be present at the same time (1) whereas email can be sent and will wait in the recipient's in box until accessed (1)

[6]

- (b) **Describe three facilities of fax that the tour guide could use.**

One for identification, second for description:

Store numbers (1) in memory/can be allocated to short cut key (1)

Multiple recipients (1) from a single pass (1)

Colour printing (1) if received in colour (1)

Send documents (1) scanned into memory/converted to binary (1)

Receive documents (1) into memory/printed out (1)

Redial (1) if number engaged (1)

Photocopying (1) scans into memory/prints out (1)

[6]

8 (a) Identify the three crimes described by the CMA.

Correct Answer Only:

Unauthorised computer access (1)

Unauthorised modification of data (1)

Unauthorised access with intent to commit (or facilitate commission of) further offences (1).

[3]

(b) (i) Identify four of the principles of the DPA.

Allow 1 mark per principle

Any four from:

- 1 "Personal data shall be processed fairly and lawfully." (1)
- 2 "Personal data shall be obtained only for one or more specified and lawful purposes, and shall not be further processed in any manner incompatible with that purpose or those purposes." (1)
- 3 "Personal data shall be adequate, relevant and not excessive in relation to the purpose or purposes for which they are processed." (1)
- 4 "Personal data shall be accurate and, where necessary, kept up to date." (1)
- 5 "Personal data processed for any purpose or purposes shall not be kept for longer than is necessary for that purpose or those purposes." (1)
- 6 "Personal data shall be processed in accordance with the rights of data subjects under this Act." (1)
- 7 "Appropriate technical and organisational measures shall be taken against unauthorised or unlawful processing of personal data and against accidental loss or destruction of, or damage to, personal data." (1)
- 8 "Personal data shall not be transferred to a country or territory outside the European Economic Area, unless that country or territory ensures an adequate level of protection for the rights and freedoms of data subjects in relation to the processing of personal data." (1)

[4]

(ii) Identify two of the legal rights that customers of the travel company have under the DPA.

Any 2 from:

Subject Access (1)

Prevention of Processing (1)

Prevention of Direct Marketing (1)

Prevention of Automated Decision Taking (1)

Compensation (1)

Correction (1)

Assessment (1)

[2]

9 Identify three services that the BCS can provide for the network manager.**Three from:**

- Up to date information about ICT (1)
- Help with legal aspects (1)
- Books on specific issues (1)
- Training courses on issues (1)
- Regular briefings (1)
- Meetings with colleagues (1)
- Listing members directory (1)
- Recognised qualification (1)
- Access to website (1)
- Continued Professional Development (1)

[3]**10 Discuss the impact that portable technology has had on individuals who are on holiday abroad.****Seven marks for discussion, 1 mark can be for conclusion:**

| | |
|-----|---|
| 0-2 | Identification Only Identification of 1 point only (1) Identification of 2 points or more (2) |
| 3-4 | Advantages Only OR Disadvantages Only 1 advantage (3) 2 or more advantages (4) 1 disadvantage (3) 2 or more disadvantages (4) |
| 5-7 | Advantages AND Disadvantages Advantages of 1 and disadvantages of 1 (5) Advantages of 2 and disadvantages of 2 (6) Advantages of 3 and disadvantages of 2 (7) Advantages of 2 and disadvantages of 3 (7) |

Identification:

A relevant point that relates to the question and involves ICT. It is not expanded upon or implications given.

Advantage/Disadvantage:

The point is applied to the situation and the advantages or disadvantages are expanded upon.

Codes to use are:

- **I - Identification**
- **P - Advantage (positive)**
- **N - Disadvantage (negative)**

C - Conclusion (1)

Points to cover may include:

Never out of contact, mobile phone coverage most places, digital cameras, video cameras, PDA's.(1)

Advantages (expanded) to include:

Never out of contact so can reassure family when arrive and if any problems, can take lots of pictures; not limited to films or carry lots of films around; technology allows you to know what is happening in the rest of the world; can check up on flights; confirm bookings etc. (P)

Disadvantages (expanded) to include:

Not completely relaxed; can take the work with you; people from office can contact you; lots of photos for people to sit through when you get home; increase in insurance and claims if damaged or lost (N).

[7]

| Code | Marks |
|--------------|--------------|
| I | 1 |
| II | 2 |
| P | 3 |
| N | 3 |
| PP | 4 |
| NN | 4 |
| PN | 5 |
| PPNN | 6 |
| PPPNN | 7 |
| PPNNN | 7 |

QWC [4]

**Mark Scheme 2514
June 2007**

INSTRUCTIONS ON MARKING SCRIPTS

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- b) All scripts must be marked in accordance with the version of the mark scheme agreed at the Standardisation Meeting.
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(Section 8a – d, page 6)

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- the handling of unexpected, yet acceptable answers.
(Section 6a, bullet point 5, page 4)

There will be times when you may not be clear how the mark scheme should be applied to a particular response. In these circumstances, a telephone call to the Team Leader should produce a speedy resolution to the problem.
(Appendix 5, para 17, page 25)

The Awarding of Marks for Written Communication

Marks are awarded for the use of accurate spelling, punctuation and grammar according to the following criteria.

| | | Marks |
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- 0** Award only in rare circumstances eg no written work or minimal, which is not in sentences and is spelt incorrectly, without use of appropriate technical terms.
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- 2** Candidates use some sentences and some technical words. Some errors in grammar and spelling.
- 3** Candidates use sentences correctly, with few errors in grammar. Some technical words used appropriately and with limited spelling errors.
- 4** Almost perfect use of grammar, technical vocabulary and spelling.

The 'norm' will probably be 3 marks. However, do not be afraid to award 4 marks if appropriate.

General advice to Assistant Examiners on the procedures to be used

- 1 The schedule of dates for the marking of this paper is of paramount importance. It is vital that you meet these requirements. If you experience problems then you must contact your Team Leader without delay.
- 2 Please ensure that you use the final version of the Mark Scheme which will be available at the end of the Examiner's Standardisation meeting. You are advised to destroy all draft versions.
- 3 An element of professional judgement is required in the marking of any written paper, and candidates may not use the exact words which appear in the detailed sheets which follow. If the science is correct and also answers the question then the mark(s) should normally be credited. If you are in doubt about the validity of any answer then contact your Team Leader for guidance.
- 4 Mark in red. A tick (✓) should be used, at the appropriate point, for each answer judged worthy of credit.
- 5 Strike through all blank spaces and/or pages in order to give a clear indication that the whole of the script has been considered.
- 6 The mark total for each question should normally be ringed at the bottom right hand side.
- 7 In cases where candidates give multiple answers, mark the first answer(s) up to the total number required. In specific cases where this simple rule cannot be applied, the exact procedure to be used will be given in detail at the Examiners' Standardisation meeting.
- 8 Some questions may have a 'Level of Response' mark scheme. Details of these are given in Appendices attached to this Mark Scheme.
- 9 Abbreviations, annotations and conventions used in the detailed Mark Scheme:
 - / = alternative and acceptable answers for the same marking point
 - NOT = answers which are not worthy of credit
 - ___ = (underlining) key words which **must** be used to gain credit
- 10 Abbreviations to be used when marking:
 - ^ = omission mark
 - bod = benefit of the doubt
 - nbod = not benefit of the doubt
 - je = just enough to get the mark
 - tv = working towards credit, but not awarded the mark, too vague
 - con = contradiction (cases where candidates contradict themselves in the same response)
 - NAQ = Not answered the question
 - MTP = Miss the point
 - NE = Not enough
 - r = repetition
 - () = words around text indicate that what is written is irrelevant and has been ignored

1 (a) Describe vector graphics.

Any four from:

- Points described by relative distance from origin (1)
- Objects can be scaled with no loss of quality (1)
- Distances can be calculated (1)
- Objects can be grouped (1)
- Every component is described by its features (1) length/ thickness/ colour (1)
- Created by mathematical equations/calculations (1)
- Individual elements that make up the graphic can be edited independently (1) eg moved/copied/resized (1).

[4]

(b) Describe two advantages and two disadvantages of using clip art when creating the logo for Koi Bitz.

Up to 2 per point, 1 for identify, 1 for further explanation. For example:

Advantages

- Readily available (1) do not need to buy expensive software (1)
- Can be used by most users (1) do not have to employ designers (1)
- Choice (1) most categories are available (1)
- No need to buy special equipment (1) such as scanner (1)
- Saves time/free (1) **MUST** be justified

Disadvantages

- Can be copyright (1) need to check with originator (1)
- May not be unique (1) other company may have used the graphic (1)
- Clip art is limited (1) have to use what is available (1)
- Quality (1) could be poor (1)
- May not have specific images required (1) such as Koi Carp (1)

[8]

(c) Explain how the logo shown was created.

Any four from: (does not have to be in correct order)

- Insert image/clipart/suitable example of file type (1)
- Insert text object eg WordArt (1)
- Draw frame/text box (1)
- Insert text (1)
- Adjust size of text (1)
- Layering / in front & behind text/graphics (1)
- Format style / shape of text (1)
- Positioning of text/graphic (1)
- Insertion of border (1)

NOT grouping.

[4]

(d) Describe how grouping could be used to aid the re-arrangement of the logo.

Any four from:

- Several objects/frames behave as one (1)
- They can be moved/resized/rotated at the same time (1)
- Text/graphics can be grouped (1)
- No loss of final design on manipulation (1)
- Allow examples.

[4]

(e) Describe the following features that could be used.

Maximum 2 points per feature:

Brightness

The total amount of light in a colour (1) Zero brightness is black (1)
100% brightness is white (1).

[2]

Fill

Can be used to replace colour (1) in an enclosed area (1) all pixels of one
colour (1) can be replaced with another (1).

[2]

Contrast

Difference between dark and light areas (1) high contrast shows high
differences between dark and light (1) whilst low contrast shows low
difference (1).

[2]

2 (a) Explain three reasons why a database is suitable to store and handle
customer records.

1 for identify, 1 for further explanation maximum 2 per point.

For example:

Query/search facilities (1st) for example: specific customers can be found
(1)

Production of reports (1st) commonly used reports can be programmed into
database (1st)

Can be linked to WP (1st) use for mail merge (1)

Data entry can be validated (1st) reduces risk of user error (1)

Sort (1st) for example customers can be sorted into amount spent (1).

[6]

(b) (i) Describe two advantages of using off-the-shelf software.

Maximum four from eg:

Software has already been tested (1)

Purchase price is one-off cost (1)

Very little time delay in implementing the software (1) available immediately (1)

Support available from a variety of sources (1)

Staff may be familiar with layout/toolbars (1) little training needed (1)

Can select different vendors (1)

If software bought from vendor of software currently used (1) no problem with integration (1).

Do NOT accept cost unless related to development cost

[4]

(ii) Describe two advantages of having the software custom-written.

Maximum four from eg:

Company owns the copyright (1) so can sell to recoup cost (1)

Can specify features required (1) meets needs of company exactly (1)

No redundant features (1) smaller footprint (1)

Can evolve / be upgraded (1) to continue to meet needs of company (1)

[4]

(c) Identify the characteristics of data in:

(i) First normal form (1NF):

Every data value in a field is atomic (1)

There is a primary key (1)

There are no repeating fields within a table (1).

[2]

(ii) Second normal form (2NF):

The rules of 1NF are followed (1)

There are no partial key dependencies (1).

[2]

(iii) Third normal form (3NF):

The rules of 2NF are followed (1)

There are no non-key dependencies (1).

[2]

(d) Describe three main components of a data dictionary.**Maximum 2 per point, 1 for identify, 1 for description.****Any three from:**Table Name (1st) The name of the table unique for each table in the database (1)Field Name (1st) The unique name for each field (1)Data Type (1st) allocated to each field (1) eg text/string/date/Boolean (1)Field length (1st) the number of characters allocated for the contents of each field (1)Default Values (1st) a value that automatically appears on the creation of a new record (1)Validation (1st) drop down lists/look-ups/presence checks (1)Relationships between data (1st) Primary and Foreign Keys defined (1)Permissions (1st) who can change data (1)Table Security (1st) Access rights (1) change/edit/modify/read only (1)

Indexes (1) Any field that is indexed (1).

Allow examples.

[6]**(e) (i) State the primary key of the ORDER entity.**

Order_Code (1).

[1]**(ii) State one foreign key.**

Cust_ID/Product_ID (1).

[1]**(iii) State the relationship between the PRODUCT and ORDER entities.**

One PRODUCT may be on Many ORDERS/1:M (1)

One ORDER may have Many PRODUCTS (1) – DNA M:1

[1]

- 3 (a) **Identify and describe three form controls that could be used to customise the user interface.**

Maximum 2 per point, 1 for identify, 1 for description.

Any three from:

- Button (1st) the user pushes a button to start an event (1) buttons can be linked to macros (1)
- Check Box (1st) options can be checked (1)
- Label (1st) instructions to the user (1)
- Combo Box (1st) items available are selected from a drop down list (1)
- Option Button (1st) selected by the user from a group of options/values (1)
- List Box (1st) the user can select one or more items from the given list (1)
- Text Box (1st) text is written and used in the spreadsheet (1).
- Spinner (1st) to increase and / or decrease values (1)

Accept Diagrams ONLY for identify mark.

[6]

- (b) **Describe absolute and relative cell referencing giving an example of each.**

Maximum 2 per description, maximum 1 per example.

Absolute:

Copies the same cell reference (1) without modification (1) example of syntax ie \$B\$1 (1).

Example: MUST relate to scenario

eg Delivery charges/VAT rate (1).

Relative:

Cell contents/reference copied (1) changes when the formula is copied to other cells (1) example of syntax ie B1 (1).

Example: MUST relate to scenario

Totals of columns/rows of data (1).

[6]

- (c) **State the type of chart most suitable to display the following:**

- (i) **The proportion of customers from each region of the UK.**

Pie Chart.

[1]

- (ii) **Sales of a brand of fish food over a 12 month period.**

Bar chart/histogram.

[1]

4 (a) Describe each of the following word fields:

Maximum 2 points per field.

- (i) **ASK**
Prompts user for information (1) used for variable information (1) not available in data source (1). [2]
- (ii) **NEXT RECORD**
Merges the next data record (1) into current document (1). [2]
- (iii) **SKIP RECORD IF**
Two conditions are compared (1) if true then record is skipped (1) if false record is used (1). [2]

(b) Explain the process of mail merge.

Any four from: (can be in any order)

- Create data source (1)
Create standard letter (1)
Put merge fields in (1)
Insert Word field (1)
Merge/print out (1)
Link master document to source document (1). [4]

5 Describe the characteristics of a computerised stock control system.

Any 7 from eg:

- Able to record how much of a particular item is in stock (1)
When new orders of a specified product are due (1)
Can be linked to supplier (1)
Used for Just in Time (JIT) ordering (1)
Can produce lists of products stocked and suppliers (1)
Hold minimum and maximum stock levels (1)
Know delivery times for products ordered (1) Update stock records when deliveries are made (1)
Predict stock needs based on previous sales (1)
Enable manual overrides by manager (1). [7]

TOTAL [86]

Quality of written communication [4]

Mark Scheme 2515
June 2007

INSTRUCTIONS ON MARKING SCRIPTS

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1 Before the Standardisation Meeting

Before the Standardisation Meeting you must mark a selection of at least 10 scripts. The selection should be drawn from several Centres. The preliminary marking should be carried out **in pencil** in strict accordance with the mark scheme. In order to help identify any marking issues which might subsequently be encountered in carrying out your duties, **the marked scripts must be brought to the meeting.** (*Section 5c, page 6*)

2 After the Standardisation Meeting

- a) Scripts must be marked in **red**, including those initially marked in pencil for the Standardisation Meeting.
- b) All scripts must be marked in accordance with the version of the mark scheme agreed at the Standardisation Meeting.
- e) **Annotation of scripts**

The purpose of annotation is to enable examiners to indicate clearly where a mark is earned or why it has not been awarded. Annotation can, therefore, help examiners, checkers, and those remarking scripts to understand how the script has been marked.

Annotation consists of:

- the use of ticks and crosses against responses to show where marks have been earned or not earned;
- the use of specific words or phrases as agreed at standardisation and as contained in the final mark scheme either to confirm why a mark has been earned or indicate why a mark has not been earned (eg indicate an omission);
- the use of standard abbreviations eg for follow through, special case etc.

Scripts may be returned to Centres. Therefore, any comments should be kept to a minimum and should always be specifically related to the award of a mark or marks and be taken (if appropriate) from statements in the mark scheme. General comments on a candidate's work must be avoided.

Where annotations are put onto the candidates' script evidence, it should normally be recorded in the body of the answer or in the margin immediately adjacent to the point where the decision is made to award or not award the mark.

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- i) Marked scripts must give a clear indication of how marks have been awarded, as instructed in the mark scheme.
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The Standardisation Meeting will include a discussion of marking issues, including:

- a full consideration of the mark scheme in the context of achieving a clear and common understanding of the range of acceptable responses and the marks appropriate to them, and comparable marking standards for optional questions;
- the handling of unexpected, yet acceptable answers. (*Section 6a, bullet point 5, page 6*)

There will be times when you may not be clear how the mark scheme should be applied to a particular response. In these circumstances, a telephone call to the Team Leader should produce a speedy resolution to the problem. (*Appendix 5, para 17, page 26*)

The Awarding of Marks for Written Communication

Marks are awarded for the use of accurate spelling, punctuation and grammar according to the following criteria.

| | | Marks |
|------------------------------------|--|------------|
| Below Threshold Performance | | 0 |
| Threshold performance | Candidates spell, punctuate and use the rules of grammar with reasonable accuracy; they use a limited range of specialist terms appropriately. | 1 |
| Intermediate performance | Candidates spell, punctuate and use the rules of grammar with considerable accuracy; they use a good range of specialist terms with facility. | 2–3 |
| High performance | Candidates spell, punctuate and use the rules of grammar with almost faultless accuracy, deploying a range of grammatical constructions; they use a wide range of specialist terms adeptly and with precision. | 4 |

The marks will be awarded on an impression basis and will reflect the candidate's performance in the paper as a whole.

Rule of thumb



- 5 Award only in rare circumstances e.g. no written work or minimal, which is not in sentences and is spelt incorrectly, without use of appropriate technical terms.
- 6 Questions answered using statements or single words only.
- 7 Candidates use some sentences and some technical words. Some errors in grammar and spelling.
- 8 Candidates use sentences correctly, with few errors in grammar. Some technical words used appropriately and with limited spelling errors.
- 9 Almost perfect use of grammar, technical vocabulary and spelling.

The 'norm' will probably be 3 marks. However, do not be afraid to award 4 marks if appropriate.

- 1 (a) Two facilities available on the telephone system are voicemail and ringback.

Describe how the company would use these facilities.

Voicemail

- Allows message to be left (1) if engaged / or no answer (1)
- can re-record message (1)
- can forward messages (1)
- delete messages (1)
- save messages (1)
- access messages remotely (1)
- can be unique to individuals or departments (1) / personalised messages (1)
- managed independently of other extensions (1)

Ringback

- if the number is engaged the caller is offered the facility (1)
- code number entered (1) / sequence of numbers pressed (1)
- to confirm who it is (1)
- system continually tries to connect to employee/department extension (1)
- when the phone is free / once connection made system calls back (1)
- saves repeated dialling (1)
- allow any automated ringback procedure (1)

Max 4 for either section

[Max 6]

- (b) Describe the facilities of the automated telephone system which would enable Paul to check on the availability of the kettle.

One for identifying a facility, second for description:

- idea of a menu (1) in a tree structure (1)
- clear instructions (at each level) of the number of options available (1) take path to 'availability' option (1)
- ability of the system to interpret tones (1) use handset to key in product code (1)
- recognition of key words (1) to confirm option choice (1)
- automated voice responds with number available (1) option to end call (1)
- or continue shopping (1)
- opportunity to speak to a 'real' person at any level (1) if options do not cover required service (1)

[Max 6]

- (c) Explain why people often find automated telephone answering systems frustrating.

Any four points:

- often have to wait in a long queue (1)
- a 'short' phone call can end up taking a long time (1)
- message such as 'your call is important to us' has a hollow ring/to be told to continue holding (1)
- easy to lose the way through the menu/difficulty in rectifying errors (1)
- required option not always available (1)
- people often just want to speak to a person (1)
- which is often an option difficult to find (1)
- calls are not always free (1)
- so customer paying for the 'privilege' of holding (1)
- average waiting time is 10 minutes (1)
- accents can be misinterpreted/not understood (1)
- listening to all the options (1)

[Max 4]

- (d) (i) **Explain the purpose of encryption and authentication if Paul pays for his kettle on-line using his credit card. Give an example of how each would be used.**

Encryption

Purpose:

- provides security for the data (1) by preventing the data from being understood (1)
- makes successful interpretation more difficult (1) for unauthorised people (1)
- makes sensitive data unintelligible/meaningless (1) during storage or transmission between systems (1)

Example:

- credit/debit details are scrambled (1)

Allow any other valid examples

2 for explanation, 1 for example

[Max 3]

- (ii) **Authentication**

Purpose:

- ensures the user has correct access rights (1) otherwise they can not access the data (1)
- ensures who sent (1) and who received the data (1)
- two parties need to know what authentication is being used (1) in order to access/unscramble the data (1)

Example:

- eg transfer of private/sensitive details between financial institutions (1)

Allow any other valid examples

2 for explanation, 1 for example

[Max 3]

2 (a) Describe the characteristics and purpose of the company intranet.

Characteristics:

- information is in a web-page format (1) hyperlinks are used to navigate (1)
- access by user name and password (1) limited to employees of the company (1)
- access levels are assigned (1) according to company status (job needs) (1)
- external access can be restricted (1) security is maintained by a firewall (1)
- discussion groups (1) enable focussed dialogue (1)
- chat rooms (1) encourage similar interests to be shared (1)
- calendar facility (1) gives a central reference point for meetings (1)
- ability to share files (1) with other colleagues working from home/situated in the office (1)
- e-mail (1) secure communication (1)

One for identify, second for description up to max 4

Purpose:

- to enable employees to communicate efficiently/keep in contact (1)
- to share information (1)
- relevant to the company (1)
- to enable file sharing (1)
- to maintain an electronic presence in the office (1)
- to submit work remotely (1)

At least two Purposes for full marks

Do not award file sharing twice

[Max 6]

(b) (i) Describe two advantages of using broadband rather than a dial-up connection.

One for identify, second for description

- Broadband has sufficient bandwidth (1) to allow voice and data at the same time (1)
- simultaneous transmission (1) phone is not tied whilst using the intranet (1)
- more data can be sent (1) at the same time (1) making it feasible to deal with large files/large volumes of data (1)
- faster initial connection/always on (1) no wait for dial-up (1)
- continuous data/audio streaming (1) no delay during download of file (1)
- cost implications if fully justified (cost (1), justification (1)) **[Max 4]**

(ii) Explain the drawbacks of ADSL.

Any four points:

- ADSL is not (usually) a guaranteed bandwidth service (1) unlike conventional leased line services (1)
- the achievable performance is not guaranteed (1)
- ADSL is not symmetric (1) and is only fast in one direction (1) so downloads (from the internet) are much faster than uploads (1)
- uses copper cable (1) leading to degradation related to distance from exchange (1) so availability is limited in some areas (1) **[Max 4]**

- (c) Describe two features of a forms interface, giving examples of how each would be used for entering details of insurance claims.

Drop down lists (1)

allows the user a single choice from acceptable options (1)

includes natural validation (1)

eg given a client name choose a relevant policy (1)

Dialogue Boxes (1)

allows direct responses to specific questions (1)

eg first line of address (1)

Radio Buttons (1)

With suitable expansion (1)

And example (1)

Check boxes/tick boxes/list boxes (1)

To select certain options from a list (1)

Sensible eg in context (1)

Text boxes (1)

For input of free text (1)

eg extra notes about a particular claim (1)

Spinners (1)

Scrolling through a cyclic list of finite choices (1)

Sensible eg (1)

Any 2 – 1 for naming, 1 for description and 1 for example

[Max 6]

- (d) Describe one advantage of using a CLI

One for identify, second for description

- knowledge of acceptable commands (1) allows access to the whole system (1)
- use of switches to narrow down choices (1) can go straight to area required (1)
- text based (1) takes up less memory/lower overheads (1)

NOT uses commands

[Max 2]

3 (a) Describe three other applications of satellite technology.

One for identify, second for description:

- Weather forecasting (1) collection and transmission of meteorological data (1)
- communications (1) enabling links to remote areas (1)
- television/broadcasting (1) satellites allow for many different channels (1) /enable outside broadcasts back to a studio (1)
- photography (1) satellites enable large and small areas to be viewed (1) /mapped (1)
- geological surveys (1) to map mineral deposits / natural resources (1)
- governments / military organisations (1) monitoring weapons installations (1) /troop movements (1)
- telephone service providers (1) large number of simultaneous international transmissions (1)
- financial institutions (1) secure data transfer / transactions (1)

Accept other applications

[Max 6]

(b) Describe the disadvantages of satellites.

One for identify, second for description:

- Needs line of sight (1) can lose signal in built up areas (1)
- gps databases need updating (1) new builds or locations may not be included(1)
- are expensive to set up (1) and maintain (1)
- general congestion (1) limitation on number of satellites in geostationary orbit (1)
- affected by weather conditions/interference (1) signal degradation (1)
- distance from earth (1) messages takes time (1)

Accept other points but NOT cost of making

[Max 6]

4 (a) State three other stages in the systems life cycle.

Any 3 from:

- design (1)
- development (1)
- testing (1)
- implementation/changeover/installation (1)
- monitoring (1)
- evaluation (1)
- maintenance (1)
- accept documentation (1)

[Max 3]**(b) State three items that should be included in a design specification.**

Any 3 from:

- input documents (1)
- input interface (1)
- data processing (1)
- security (1)
- backup procedures (1)
- restoration procedures (1)
- output on screen (1)
- output documents (1)
- output files (1)
- details/rules/layout of user interface (1)
- file structures (1) /data structures (1) /queries (1) /reports (1)
- validation routines (1)
- error messages (1)
- system diagrams (1)
- test plan (1)

[Max 3]**(c) Describe how a user-centred approach could be followed throughout the life cycle of the new system.**

One for identify, second for description:

- involve the users (internal and/or external) at all stages (1) by interview (1)
- identify the users perceived problems with the current paper system (1) by observation (1) /questionnaire (1)
- ascertain current levels of ICT expertise (1) using questionnaires (1)
- prototypes of designs are used to invite comment (1) necessitates iteration (1)
- user group meetings (1) refine development requirements (1)
- end users involved in creating tests (1) and carrying out testing (1)
- users create implementation timetable (1) to avoid busy periods (1)
- users involved in monitoring progress (1) through scheduled meetings (1)
- evaluate the end product (1) against the users' specification (1) **[Max 6]**

5 (a) State four services provided to the viewer by interactive television.

Any four from:

- video on demand (1)
- alternative camera angles (1)
- participate in discussions/interactive quizzes/games (1)
- e-mail via TV (1)
- internet via TV (1)
- influence storylines (1)
- shopping (1)
- voting (1)
- adding to relevant survey information (1)

Accept other relevant services

[Max 4]

(b) Describe one advantage and one limitation to the viewer of using interactive television.

One for identify, second for description:

Advantages

eg

- playback of favourite programmes (1) without the need to record to media (1)
- allows (limited) access to internet/e-mail/on-line shopping (1) for those who don't have other forms of internet access (1)
- can (up to a point) influence the type of advertising received (1) by giving a customer profile(1)

One for identify, second for description:

Limitation

e.g.

- many viewers see TV purely as passive entertainment (1) and may resent attempts to encourage interactivity (1)
- true interactivity is very limited (1) 'interactive news' is little different from changing channels (1)
- available bandwidth (1) may not fully support all features and cause delay (1)

Must have one advantage and one limitation described for full marks

[Max 4]

- 6 (a) **State two other pieces of physical data which can be used for identification purposes.**

Any two from:

- Fingerprints (1)
- DNA (1)
- Iris pattern data (1)
- Face recognition (1)
- Voice patterns (1)
- Palm scan (1)

NOT retina data

[Max 2]

- (b) **Explain how advances in technology may overcome these limitations.**

Each good point scores a P and all elaborations on that point gain an E, to a maximum of three. Two or more Points require Expansion for full marks.

A Point:

A *relevant* point that relates to the question and involves advances in technology. It is not expanded upon or implications given.

An Expansion:

The point is applied to the situation and expanded upon i.e. no expansion without a point.

The only codes to use are:

- P – Point
- E – Expansion

Point:

- capacity of storage media is increasing all the time as cost reduces

Example of Expansions:

greater capacity of media increases storage space for digital data, varied biometrics can be stored on a greater number of individuals and on a wider range of media which is portable and cost effective, data is analysed and compared more accurately from the amount and variety stored, meaning the verification of individuals' identification for medical, governmental and law enforcement purposes is more accurate.

Point:

- increase in speed of data transmission and bandwidth available

Example of Expansions:

substantial amounts of data transferred between sites within a small time frame, individuals' identities can be verified globally, access to sensitive data such as finances can be done securely without a username and password which could be held without authorisation, so reducing security breaches and enabling greater control of an individual's access to services.

Point:

- data collection technology increasingly more accurate and captures a wider variety of data in a shorter time

Example of Expansions:

parallel architecture in a system speeds calculations, the increased speed of processing enables applications to analyse and process collected data in a shorter time, data can be used instantaneously to uniquely identify individuals, shorter turnaround in the production of documents requiring biometric data.

Point:

- methods of securing data during storage and transmission have become increasingly more complex

Example of Expansions:

full disk encryption uses authentication and encryption to protect against theft or loss, encrypts and decrypts all data travelling to and from hard drive making it unreadable, allows software applications to store biometric data in secure partitions of the hard drive, preventing data protected under legislation falling into the wrong hands and lawsuit for the organisation.

| | |
|--------------------------------------|----------------|
| P | 1 mark |
| (P+P) or PE | 2 marks |
| (P+PE) or PEE | 3 marks |
| (PE +PE) or (P+PEE) or (PEEE) | 4 marks |
| (P+PE+PE) or (PE+PEE) | 5 marks |
| (PE+PE+PE) or (PEE+PEE) | 6 marks |
| (P+PE+PE+PE) or (P+PEE+PEE) | 7 marks |
| (PE+PE+PE+PE) etc. | 8 marks |

[Max 8]

QWC [4]

**Mark Scheme 2517
June 2007**

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Rule of thumb



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- 14 Almost perfect use of grammar, technical vocabulary and spelling.

The 'norm' will probably be 3 marks. However, do not be afraid to award 4 marks if appropriate.

1 (a) To make the business more efficient the owner wishes to install some computer equipment in the office.

(i) Apart from the keyboard, mouse and monitor, describe three computer peripherals which could be useful in this office, giving a use for each peripheral.

eg

A printer/photocopier [1] to print letters to customers [1]

A DVD writer/USB stick/external hard drive [1] to back up the customer database [1]

A scanner [1] to scan customer letters for storage [1]

A hard-drive [1] to store the database and other items [1]

A colour printer [1] to print off maps [1]

[6]

(ii) Describe three facilities of the Internet which the owner could use to help plan journeys.

Note, for the second mark to be allowed it must be relevant to this business.

eg

A route finding service [1] to provide maps for his trip [1]

A weather forecast service [1] to provide information on the weather conditions for the trip [1]

Road reports [1] to pin-point closed roads or accidents [1]

News reports [1] which could prevent him travelling to areas where an incident might be taking place [1]

Newsgroups [1] with reason [1]

Discussion groups [1] with reason [1]

Email [1] with reasons [1]

[6]

(b) Computer equipment is one internal resource of the firm. Describe two other internal resources of the firm.

An office/building [1] to contain the equipment/hardware [1]

People/employees [1] to operate the computers [1]

The vans [1] used to deliver the packages [1]

[4]

- 2 (a) (i) Explain the difference between data and information.

Data is a meaningless collection of characters [1]

Information is data with interpretation/meaning/context/structure [1]

Allow example for full marks.

[2]

- (ii) Describe two examples of information which might be exchanged between the firm and the customers (allow exchanges both ways).

eg

The firm would send the customer the date of the pickup [1] to make sure that access to the goods is possible [1]

The firm would send the customer an invoice [1] in order to get paid [1]

The customer would send the firm an address [1] so that the firm would know where to pick up the goods [1]

[4]

- (b) Describe how the owner might make use of:

- (i) a financial information processing system:

eg

an invoicing system [1] which would calculate the amount a customer owed [1]

or automatically send reminders to those who had not paid [1]

calculate wages[1], model trends [1], work out profit [1]

[3]

- (ii) a personnel information processing system:

eg

an employee file [1] containing the names and addresses of the employee [1]

The master file [1] could be updated whenever the status of an employee changed [1]

[3]

- 3 (a) (i) **Describe the characteristics of a computer-based information system which would help the owner plan routes for his vans.**

It should have an easy to use [1] interactive interface [1]
 There should be rapid response [1] to the data [1]
 Routes available should be up-to-date [1] so that time is not wasted on routes [1]
 The interface should be intuitive to use [1] requiring little training [1]
 The routes should be accurate [1]
 It should be possible to plan for most economic [1] or fastest route [1]
 Also allow drop down boxes [1]
 Automatic generation of addresses from post code entry [1]
 Should contain details of all routes used by the firm [1]
 Should be able to calculate distances [1] and estimate times of journey[1]
 Store previous routes [1]
 Going via a place[1] allowing the firm to make multiple drop offs [1] [6]

- (ii) **Explain two advantages of using this computer-based information system for planning the routes.**

eg
 The firm is likely to be more efficient/profitable/saves money [1] if the vans are following an economic route [1]
 The firm will be perceived to be competitive/customer satisfaction [1] if the vans arrive on time [1]
 Using the quickest routes means more journeys are possible [1] in a given time [1]
 Manager can check distances covered by vans [1] to ensure driver took given route[1] [4]

- (b) **Explain the differences between batch processing and real-time processing. You should include examples of how the firm might use each type of processing.**

eg

Batch processing

Data is collected together over a period of time [1] and then processed as a batch at some off-peak period [1] This means that there is less disruption to the daily work [1] and peripherals are accessible in the day [1]
 Bills can be prepared at the end of a day when the computer and printer are not being used by other processes [1]
 Customers bills can be calculated and printed without staff being present [1]
 This will make the firm more efficient and profitable [1]
 Staff pay can be worked out using batch processing [1] because all the information concerning overtime and sick leave can be collected before the wages are calculated [1]

Real time

The response to a query from a customer needs to be instant/processed as soon as it is received [1] or the customer will lose faith with the firm [1]
 The response time needs to be fast enough for the inputs to effect the outputs in real time [1]
 Availability of vans and drivers [1] can be decided while the customer is on the phone leading to satisfied customers [1] [7]

- (c) The firm is expanding and needs to update its computer system. A project team is employed to assist in this process. Identify the roles and responsibilities of three members of the project team.

Maximum 2 marks for any one member.

Project Manager/Manager [1]

oversees the team/team leader [1] sets deadlines [1] Ensures all tasks are finished before the next stage is started [1]

Programmer/software engineer/developer [1]

writes the programs [1] tests the programs [1]

Analyst [1]

investigates the old system [1] assesses the suitability of the system for upgrading [1]

Designer [1]

responsible for designing the new system [1] using the recommendation of the analyst [1]

Database administrator [1]

in charge of the database [1] issues access rights [1] makes sure that the database is backed up [1]

[6]

- 4 (a) **One of the tasks of the project team is to decide whether to use custom-written or an off-the-shelf package for working out the wages of the employees. Describe the advantages and disadvantages of using custom-written rather than off-the-shelf software.**

Must be advantages (max 3) and disadvantages (max 3) for full marks. A well explained point could score extra marks.

Advantage

The software will do exactly what you want/no unwanted features [1]

There will be a smaller footprint/less memory used than off-the-shelf [1]

The software copyright will belong to the firm [1] it can be sold to recover costs[1]

Disadvantage

The software will be more expensive than off-the-shelf [1]

It may have more bugs than off-the shelf [1]

It will take longer than OTS before it can be implemented [1] **[4]**

- (b) **Describe the steps involved in producing a custom-written computer based system.**

(Order of steps is not important)

(Must be more than one word for marks)

Needs/problems of the user identified [1]

Design created [1]

Program/software produced [1]

Test plans created/tests carried out [1]

Creating prototypes [1]

Installation/ implementation of the system [1]

Documentation/instruction guide [1] **[4]**

- 5 (a) **As a result of the planning of the new system it is decided to move to bigger premises in a nearby town. Discuss the factors which should be considered when managing these changes.**

This answer will be marked using **P, E and C**.

P is a point made.

E is a worthwhile expansion of that point. A **P** can have a number of **Es**.

All marks can be gained with **P** and **E** but there is a possible extra mark for a conclusion **C** (but maximum of 7 marks for this question).

| | |
|---------------|---------|
| P | 1 mark |
| P, P or PE | 2 marks |
| P, PE | 3 marks |
| PE, PE | 4 marks |
| P, PE, PE | 5 marks |
| PE, PE, PE | 6 marks |
| P, PE, PE, PE | 7 marks |

eg

Staff views should be taken into account (**P**) as without the workforce behind the firm there could be resentment of strikes (**P**) leading to a drop in efficiency (**E**) or loss of staff (**E**)

Staff capability must be considered (**P**) If they are not properly trained they may not be able to operate the new system (**P**) This could lead to mistakes and inefficiency (**E**)

The new systems need to be carefully implemented (**P**) to ensure no loss of business while it is taking place (**E**)

Customers must be kept informed of the changes (**P**) so that customers are not lost to rival firms during the changeover (**E**)

Equipment must be carefully chosen to make sure that it does the job (**P**) and will not become redundant in a short time (**E**)

Accommodation must be suitable for the new system (**P**) and be able to hold the new system and staff and if necessary room for expansion (**E**)

The new business is in a different area (**P**) so the staff should be offered travelling expenses or help with relocating (**E**)

The infrastructure of the trading estate (**P**) needs to be able to support the new business with (eg) broadband facilities (**E**)

In conclusion - for the business to move to the new system efficiently there should be careful management of all aspects of the business with special emphasis on keeping the workforce on-side (**C**) [7]

- (b) **Once the new system has been implemented it needs to be maintained. Identify three different types of maintenance.**

Adaptive [1]

Perfective [1]

Corrective [1]

[3]

- (c) **The firm takes on work in other countries and sends representatives to those countries to negotiate contracts. Explain developments in ICT that have given the representatives greater freedom to access information while they are abroad.**

Mobile phones/satellites /GPRS/WAP [1] allowing the representatives to use the internet anywhere in world [1]

PDA/Laptop/palmtop computers/ WiFi [1] can be plugged into the telephone system in many places [1]

Communication systems in most countries are fairly reliable [1] meaning that email can be received anywhere [1]

Video conferencing can take place [1] using broadband technology [1]

Email [1] to receive attachments.[1]

[6]

- (d) **The firm eventually joins with other removal firms abroad to form an international organisation. New software is needed for this organisation. Explain two reasons why agreed standards are needed in the design of this software.**

If the standards are not agreed/the same [1] there might be no/poor communication possible between the firms [1]

The quality of the software must be high [1] or customers/staff might lose confidence in it [1]

The reliability of the software should be recognised [1] to give accurate results [1]

If software is not designed with agreed standards in mind [1] it may not do the job properly [1]

Naming conventions must be agreed [1] so that all firms understand each others' orders [1]

[4]

- 6 It is important that the goods moved by the international organisation are collected promptly and arrive on time. The organisation needs to know where the goods and its vans are located at any time. Discuss the ICT developments that help the international organisation to meet these needs.**

This answer will be marked using **P, E and C**.

P is a point made.

E is a worthwhile expansion of that point. A **P** can have a number of **Es**.

All marks can be gained with **P** and **E** but there is a possible extra mark for a conclusion **C** (but maximum of 7 marks for this question).

| | |
|---------------|---------|
| P | 1 mark |
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| PE, PE | 4 marks |
| P, PE, PE | 5 marks |
| PE, PE, PE | 6 marks |
| P, PE, PE, PE | 7 marks |

eg

Bar codes/microchips on goods (**P**) can lead to accurate tracking of the parcels by firm/customers (**E**)

SatNav/GPS Systems (**P**) ensure that the drivers do not get lost (**E**) can deliver on time (**E**)

Route planning software (**P**) can arrange the best routes/most efficient delivery pattern (**E**)

Tracker systems in the vans (**P**) mean that the drivers cannot cheat (**E**), laws are obeyed (**E**)

Mobile phone (**P**) allows the driver to ask for further instructions. (**E**)

Sensible conclusion (**C**)

[7]

**Advanced GCE ICT (3838/7838)
June 2007 Assessment Series**

Unit Threshold Marks

| Unit | | Maximum Mark | a | b | c | d | e | u |
|------|-----|--------------|-----|----|----|----|----|---|
| 2512 | Raw | 90 | 60 | 53 | 46 | 39 | 33 | 0 |
| | UMS | 90 | 72 | 63 | 54 | 45 | 36 | 0 |
| 2513 | Raw | 120 | 102 | 92 | 82 | 73 | 64 | 0 |
| | UMS | 120 | 96 | 84 | 72 | 60 | 48 | 0 |
| 2514 | Raw | 90 | 59 | 51 | 44 | 37 | 30 | 0 |
| | UMS | 90 | 72 | 63 | 54 | 45 | 36 | 0 |
| 2515 | Raw | 90 | 55 | 49 | 44 | 39 | 34 | 0 |
| | UMS | 90 | 72 | 63 | 54 | 45 | 36 | 0 |
| 2516 | Raw | 120 | 98 | 87 | 76 | 65 | 54 | 0 |
| | UMS | 120 | 96 | 84 | 72 | 60 | 48 | 0 |
| 2517 | Raw | 90 | 62 | 56 | 50 | 44 | 39 | 0 |
| | UMS | 90 | 72 | 63 | 54 | 45 | 36 | 0 |

Specification Aggregation Results

Overall threshold marks in UMS (i.e. after conversion of raw marks to uniform marks)

| | Maximum Mark | A | B | C | D | E | U |
|-------------|--------------|-----|-----|-----|-----|-----|---|
| 3838 | 300 | 240 | 210 | 180 | 150 | 120 | 0 |
| 7838 | 600 | 480 | 420 | 360 | 300 | 240 | 0 |

The cumulative percentage of candidates awarded each grade was as follows:

| | A | B | C | D | E | U | Total Number of Candidates |
|-------------|-----|------|------|------|------|--------|----------------------------|
| 3838 | 5.2 | 19.1 | 39.6 | 64.2 | 82.9 | 100.00 | 4239 |
| 7838 | 6.4 | 22.6 | 49.8 | 76.7 | 93.6 | 100.00 | 2619 |

For a description of how UMS marks are calculated see;
http://www.ocr.org.uk/exam_system/understand_ums.html

Statistics are correct at the time of publication

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