

Mark Scheme for June 2010

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

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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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.

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

- 1 (a) **A customer orders a television and asks for it to be delivered. Information is exchanged between the store and the customer. Explain, using an example in each case, why the information exchanged needs to be**

(i) timely

eg

The television might not be received by the store (1) in time to deliver it to the customer. (1)

A new model might become available (1) if the customer had ordered too far in advance. (1)

The television may no longer be available (1) as the information is out-of-date. (1)

Max [2]

(ii) accurate

eg

If the customer gives the wrong address/address inaccurate (1) the television may not arrive at the correct destination. (1)

The wrong television may be sent to the customer (1) if the reference number was stored incorrectly. (1)

Max [2]

- (b) Identify two ways in which the manager could make use of information.**

Allow examples related to the television store

For strategic planning (1)

For decision-making (1)

Max [2]

- (c) The manager uses a personnel management system. Describe, using examples, how the manager would make use of a personnel management system.**

eg

Recording the status/job function of an employee (1)

To keep a record of all individuals employed by the company (1) including name/address/NI number/etc. (1)

To record the salary level of those employed. (1)

To keep a history of the posts held by the employees. (1)

To help the managers make judgements on whether to promote a member of staff. (1)

To help the managers make judgements on promotions (1)

To look after equal opportunities (1)

Managing training opportunities (1)

Discipline and grievance procedures (1)

Monitoring performance/appraisal (1)

Max [6]

- 2 The manager of the store keeps details of customers on a database. The manager is well aware of the importance of keeping the data secure.**

- (a) Each member of staff with access to the database is given a unique user name and password.**

- (i) Explain the need for both a user name and a password.**

The user name is to inform the computer who the user is (1) and the password confirms they are who they claim to be. (1)

Max [2]

- (ii) Explain how passwords can remain effective.**

Any 4 points or any 2 with expansions

eg

Change the password frequently (1) to thwart observers and hackers. (1)

Use combination of letters and other characters (1) to make it harder to guess. (1)

Never tell anyone your password (1) as they may be tempted to use it/pass it on. (1)

Don't use words in a dictionary/words associated with you and your family (1) as these can be more easily guessed. (1)

Don't re-use an old password (1) as this may already be known by others (1)

Restrict the number of attempts at inputting a password (1) and then lock the account if the attempts are incorrect. (1)

Max [4]

- (b) The manager makes sure that the data on the database is both backed up and archived.**

- (i) Explain the difference between backing up and archiving data.**

eg

Data you are currently working with (1) is backed up whereas data that is no longer relevant on a day-to-day basis (1) can be archived.

Backing up is done frequently/every day (1) whereas archiving is carried out at the end of a longer period of time/end of year (1)

Max [2]

- (ii) Explain why it is necessary to both back up and archive data.**

eg

Backing up is necessary in case the current work is corrupted/lost (1) it can be restored from the back up tape. (1)

Archiving is necessary to free up disc space (1) by removing data no longer required (1)

Archiving of old data is necessary in case it is required again in the future (1) by the tax man/ for references (1)

Max [4]

- 3 The manager would like to install terminals to help the sales staff respond quickly to a customer's request for a television.**

- (a) The manager would like the terminals to be interactive and have rapid response.**

Describe what is meant by

- (i) interactive**

The user and the computer (1) are in two-way communication. (1)

Max [2]

- (ii) rapid response**

The time taken for the computer to respond (1) to a request is very short. (1)

Max [2]

- (b) Explain two advantages of using modern technology in the television store.**

eg

The customers will be impressed (1) by the new interfaces and continue their custom/ inform other customers. (1)

The store will operate more efficiently (1) because the system will be quick and accurate (1)

The staff will be content (1) because their work is made easier (1)

The customers are more likely to be more content (1) if they find their shopping experience going smoothly. (1)

The customer gets an efficient service (1) and so spends less time in the store. (1)

If the customers are happy (1) they are more likely to return to buy more goods thus increasing company sales. (1)

Customer loyalty is more likely (1) if the customers are getting a fast and efficient service. (1)

The company can obtain useful data concerning the customer purchases and shopping habits (1) with the up-to-date technology. (1)

Max [4]

- (c) Each terminal will have a human computer interface (HCI). Before the HCI is designed a design specification will be produced. Describe the contents of the design specification.**

Any 6 from

The purpose of the system (1).

The inputs (1).

The outputs/screens required (1).

Assumptions, limitations or constraints (1).

Processing requirements/queries (1)

The links between screens (1)

Data structures (1)

Colours/fonts/sizes/layout (1)

Validation rules (1)

Test plan (1)

Data flow diagram (1)

Max [6]

(d) Discuss the importance of designing the interface to closely match the user's mental model.

High 7-9	<p>The candidate is able to discuss clearly the impacts and consequences.</p> <p>Candidates will show a detailed level of understanding and be able to explain in detail both the impacts and consequences of more than one position.</p> <p>Logical arguments are produced to demonstrate a clear understanding of the question.</p> <p>Ideas will be expressed clearly and fluently using specific knowledge to support and inform the discussion.</p> <p>There may be a reasoned conclusion.</p> <p>Subject specific terminology will be used accurately and appropriately.</p>
Medium 4-6	<p>The candidate is able to explain superficially the impact(s) and consequence(s).</p> <p>Candidates will show a limited understanding and be able to explain at least one impact and one consequence of a given position, however explanations may lack specific detail and/or concentrate on either an impact or consequence with a limited explanation of the other.</p> <p>The explanation, though informed, may stray from the point but specific knowledge will be evident.</p> <p>Some subject specific terminology will be used.</p>
Low 0-3	<p>The candidate is able to describe superficially the impact or consequences.</p> <p>The information may be poorly expressed and may be in the form of a list of points.</p> <p>Subject specific terminology may be limited or missing.</p>

Examples of Impacts (I)

Discussion should include

Perception

Memory

Learning

Attention

Examples of consequences (C)

Users bring their own preconceptions to the interface, so it is important to have an understanding of the user's mental model and to design the interface in such a way that builds on that model. This will enable the user to feel more comfortable using the interface and help them learn faster.

Most users will learn to use the interface by trial and error. If the product is inconsistent with the mental model the user will get lost using the product.

Users can learn quickly using a system based on their mental model.

If the system does not match their preconceptions the user will quickly tire of a system they do not recognise.

The user will be used to certain symbols and colours meaning certain things. If there is a direct relationship between red for NO and green for YES they are less likely to make mistakes using the system.

Card, Moran and Newell recognised the importance of this and developed "The Model Human Processor". The MHP has enabled better interfaces to be designed.

A well designed HCI will allow the users to feel confident when using the system and this will make them enthusiastic about and more likely to discuss it positively leading to better customer relations and more sales

Max [9]

- 4 The terminals will be linked to a computer-based information system. The manager has decided that the information system will be custom-written.**

- (a) Describe the steps involved in producing a custom-written solution.**

The order of steps is not important.)

Needs of the user identified. (1)

Design created. (1)

Drafts of program produced. (1)

Test plans created/ tests carried out. (1)

Prototyping (1)

Installation (1)

Documentation (1)

Max [4]

- (b) Describe the advantages and disadvantages of producing a custom-written rather than an off-the-shelf solution.**

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

Advantages

The software will do exactly what you want (1)

There will be a smaller footprint than off-the-shelf. (1)

The software copyright will belong to the firm. (1)

Disadvantages

The software will be more expensive than off-the-shelf. (1)

It may have more bugs than off -the-shelf. (1)

The staff will not be familiar with the software and need more extensive training. (1)

Max [4]

- (c) Explain the support that will be needed by the staff during the installation of the new computer-based information system.**

The company will involve the staff in discussions about the expected changes (1)
which should make them more likely to accept the new system. (1)

Training sessions can be given (1) which will ensure that the staff feel confident about the new system. (1)

Constant support from the company (1) should emphasise the benefits of the new system (1) The staff will be reassured (1) that their jobs are not in jeopardy. (1)

User guides/documentation (1) should be available so staff have a problem solver to hand. (1)

Max [6]

- 5 (a) **Staff should be considered when managing change.**
Describe other factors that should be considered when managing change.

eg

The change to the new system must be developed within a time scale (1) and at a cost that allow for consultation, quality assurance and development. (1)

New systems need testing. (1)

Equipment may need to be installed. (1)

Financial aspects discussed (1)

The accommodation (1) needs to be considered. Is there enough space/adequate ventilation (1)

Customers need to be informed of new changes (1) to avoid confusion. (1)

Max [4]

- (b) **New stores have been opened in other towns. Each new store has a manager.**
Explain how portable computer-based systems enable the managers to have freedom to access information.

eg

Mobile telephones (1) allow access to the office and other managers at any time. (1)

Laptop computers (1) can be connected to the stores database from a hotel bedroom. (1)

The Internet can be accessed from WAP phones/ cyber cafes/mobile computers (1) can access the Internet (1)

PDA/Laptop/palmtop computers/ WiFi (1) can be plugged into the telephone system in many places. (1)

Email/text messages (1) can be received almost anywhere. (1)

Video conferencing can take place (1) using broadband technology. (1)

Email can be used to receive attachments. (1)

Max [6]

- (c) **Explain the needs for standards of quality and reliability in information processing systems.**

eg

If standards are not agreed/the same (1) there might be no/poor communication possible between different systems/packages. (1)

The quality of the software must be high (1) or the customers/staff might lose confidence in it. (1)

The reliability of the software should be recognised (1) as giving accurate results. (1)

If software is not designed with agreed standards in mind (1) it may not do the job it was expected to do. (1)

Max [4]

- (d) **Describe two external changes that could affect the store and staff.**

eg

Changes in legislation/price of TV licence could affect sales (1)

Changes in the data protection laws might change the way the data is stored. (1)

Changes in currency rates might affect the price of a television (1)

Max [2]

- 6 Television services will continue to develop.
More services will become available, particularly those that were previously associated only with computers.
Discuss the services that might be offered both now and in the future on television and computers.**

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Examples of Impacts (I)

Storage and recording of data
 Services offered including interactive
 Quality of pictures and the hardware displaying them
 Surfing the web/emails etc using TV
 Multi-channels received and displayed at the same time
 Films on demand

Examples of consequences (C)

Data can be stored in greater quantities (I) leading to people having huge numbers of programmes stored at home making repeats of programmes on the television less popular. (C)
 Interactive services could mean (I) that we are able to cast votes for politicians/talent shows and thus influence life around us without leaving our homes (C)
 The quality of pictures increases (I) leading to a more enjoyable experience at home which may mean that cinemas and live theatre close (C)

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