

MARKSCHEME

November 2006

INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY

Higher and Standard Level

Paper 1

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1. (a) **Identify *two* different data items that will be requested from a customer by the online computer booking system.** **[2 marks]**

Award [1 mark] for each data item that is clearly identified up to a maximum of [2 marks].

Answers may include:

- place of departure or destination
- choice of flight (*e.g.* flight number)
- personal details (*e.g.* passenger name, address, telephone, e-mail)
- credit card details (*e.g.* credit card number/ expiration date)
- passport details (*e.g.* passport number, nationality, issue date) / ID card no.
- date
- number of tickets

N.B. Do not accept booking reference number as an answer.

Reward other acceptable answers with the approval of your team leader.

- (b) Describe *one advantage and one disadvantage to the passenger of using e-tickets instead of paper tickets.* [4 marks]

Award [1 mark] for an advantage that is clearly identified and [1 mark] for a disadvantage that is clearly identified up to a maximum of [2 marks].

Award [1 additional mark] for the description of each of these up to a maximum of [2 additional marks].

Answers may include:

Advantages

- Passenger will not miss the flight if tickets are forgotten [1 mark] plus description (e.g. details are available to check-in staff via the computer system as long as a passenger can identify themselves) [1 additional mark].
- Seats can be allocated in advance [1 mark] plus description (e.g. reduces difficulties in seating arrangements) [1 additional mark].
- Efficiency/speed of obtaining or using airline tickets [1 mark] plus description (e.g. passengers do not have to go to travel agencies to obtain their tickets or wait for tickets to be posted) [1 additional mark].
- Efficiency/speed of check-in process with much of the work being done by the passenger [1 mark] plus description (e.g. passengers will not have to wait in long queues at the airport) [1 additional mark].

Disadvantages

- Some passengers may experience difficulties in obtaining e-tickets using home computer systems [1 mark] plus description (e.g. slow Internet connection, passengers are uncertain about what to do in the online e-ticketing process, online help or directions are inadequate) [1 additional mark].
- Some passengers may not be familiar with the new technology at airports [1 mark] plus description (e.g. airport personnel will be required to help passengers who cannot use the new technology) [1 additional mark].
- Passengers may forget their booking reference number [1 mark] plus description (e.g. passengers who forget their number will be required to produce identification in order to check-in for their flight) [1 additional mark].

N.B. Do not accept breach of security of personal data stored in the system, as this is similar for both e-ticketing and paper ticketing systems.

Reward other acceptable answers with the approval of your team leader.

- (c) **It is important, for security reasons, that no plane is allowed to leave until all passengers whose luggage has been loaded have boarded the plane. Discuss how the use of e-tickets can be used alongside bar coded luggage labels to assist the process of baggage checking.**
[4 marks]

[0 marks] inappropriate answer.

[1 to 2 marks] limited understanding. If the factor/factors are only identified award only *[1 mark]*.

[3 to 4 marks] relevant factor/factors are recognised and developed in some depth. At the top end an expression of opinion/likelihood/consequence/conclusion is provided.

Answers may include:

- e-tickets ensure correct identification of passenger
- bar code identifies luggage item
- database system matches passenger id with luggage id
- passenger registered on boarding
- real-time / immediate check
- non showing passengers immediately identified.

Reward other acceptable answers with the approval of the team leader.

2. (a) **Explain why a user might use two or more search engines when searching for information on the World Wide Web.** [2 marks]

Award [1 mark] for a reason that is clearly identified and [1 additional mark] for further comment or explanation.

Answers may include:

- search engines may produce different results because they use different algorithms / criteria / explanation of this
- some search engines may be specialized more likely to produce results required in a particular field / example of this

Reward other acceptable answers with the approval of the team leader.

- (b) **When a search engine is used to locate information, certain web sites appear near the top of the search listings. Give two explanations for the appearance of certain websites near the top of search listings.** [4 marks]

Award [1 mark] for each way that is clearly identified up to a maximum of [2 marks].

Award [1 additional mark] for explaining the reason up to a maximum of [2 additional marks].

Answers may include:

- Pay-for-inclusion or pay-per-click listings [1 mark] plus description (e.g. many search engines make their money from advertising because their service is free, but accept payment to make the advertiser’s webpage appear near the top of search results) [1 additional mark].
- “Popular websites” with a large number of links linking to it may produce biased results [1 mark] plus description (e.g. the algorithm intentionally searches for the number of links to specific sites, new web pages that have not been “discovered” yet are disadvantaged by the algorithm) [1 additional mark].
- Algorithm used by the search returns “biased” results [1 mark] plus description (e.g. incorrect algorithm was programmed, inadequate testing of the algorithm, algorithm does not identify false techniques used by web designers to make their web pages display near the top of the listing) [1 additional mark].
- Methods are used by webpage designers [1 mark] plus description (e.g. using keywords in meta tags to highlight content and description, using “invisible” text in the same color as the background of the website that could be found by the search engine, other methods for “spamdexing”) [1 additional mark].

Reward other acceptable answers with the approval of your team leader.

- (c) **Globalization means the diminishing importance of geographic, political, economic and cultural boundaries. Discuss how the WWW has contributed to the globalization process.** **[4 marks]**

[0 marks] inappropriate answer.

[1 to 2 marks] limited understanding. If the factor/factors are only identified award only *[1 mark]*.

[3 to 4 marks] relevant factor/factors are recognised and developed in some depth. At the top end an expression of opinion/likelihood/consequence/conclusion is provided.

Answers may include:

- people have greater access to a vast amount of information.
- dramatic events anywhere in the world can be broadcast on the World Wide Web almost immediately.
- cultural diversity may be diminished and cultural homogeneity encouraged.
- people are able to purchase products from anywhere around the world.
- interpersonal communication has allowed individuals to easily talk to other individuals around the world.
- it has allowed a worldwide audience for authors/musicians.
- it has reduced the impact of government propaganda.

Reward other acceptable answers with the approval of the team leader.

3. (a) Describe *one* way that a publisher can make the news available in the printed version also available online. **[2 marks]**

Award [1 mark] for a way that is clearly identified.

Award [1 additional mark] for a description.

Answers may include:

- pdf version of the printed newspaper is made available online **[1 mark]** plus description (e.g. pdf version linked to a webpage can be downloaded or opened from the webpage, pdf version is identical in layout to the printed version) **[1 additional mark]**.
- Webpages can be created with the same news and photo as the printed version **[1 mark]** plus description (e.g. the website will not necessarily have the same layout as the printed version but the same text and photos, the website can include links to other relevant articles and information, photos will have less quality than the newspaper because of downloading time) **[1 additional mark]**.

Reward other acceptable answers with the approval of your team leader.

- (b) The availability of online news could decrease the amount of money that a publisher makes from publishing the newspaper. Describe *two* ways that profitability can be maintained when online news services are provided. **[4 marks]**

Award [1 mark] for each way that is clearly identified up to a maximum of [2 marks].

Award [1 additional mark] for a description of the way up to a maximum of [2 additional marks].

Answers may include:

- Payments from advertisers would make the online news service freely available **[1 mark]** plus description (e.g. paid pop-up ads can appear on web pages, links to advertisements and offers) **[1 additional mark]**.
- Reader subscription to online news services **[1 mark]** plus description (e.g. readers can pay by credit card or other electronic method to access/download the news, current articles could be freely accessed and payment required for past articles) **[1 additional mark]**.
- Reader option to receive complete version at cost **[1 mark]** plus description (e.g. readers can access a shortened version of the newspaper online for free and pay for the download of the complete version or receive a delivered printed version) **[1 additional mark]**.
- Personal details may be sold to third parties **[1 mark]** plus description (e.g. free access to the online newspaper may require the entering of personal information that may be sold to third parties) **[1 additional mark]**.

Reward other acceptable answers with the approval of your team leader.

- (c) **Discuss how the widespread availability of online news resources might have an impact on the production of student assignments.** **[4 marks]**

[0 marks] inappropriate answer.

[1 to 2 marks] limited understanding. If the factor/factors are only identified award only *[1 mark]*.

[3 to 4 marks] relevant factor/factors are recognised and developed in some depth. At the top end an expression of opinion/likelihood/consequence/conclusion is provided.

Answers may include:

- assignments are more likely to cover up to date material
- assignments will contain more appropriate material
- reason - easier to search for what is required
- assignments will contain a lot of copy and pasted material
- students will put less effort into constructing their work
- less original work / more plagiarism.

Reward other acceptable answers with the approval of the team leader.

4. (a) **Identify the field type suitable for storing:**

(i) **last name**

(ii) **telephone number.**

[2 marks]

Award [1 mark] for a field type that is clearly identified up to a maximum of [2 marks].

- last name-text / string
- telephone number-text / alphanumeric / string . **N.B.** Do not accept number field.

Reward other acceptable answers with the approval of your team leader.

(b) **Describe two ways in which data from the questionnaires can be entered into the database.** **[4 marks]**

Award [1 mark] for a way that is clearly identified up to a maximum of [2 marks].

Award [1 additional mark] for a description of the way up to a maximum of [2 additional marks].

Answers may include:

- Data is keyed in by data entry clerks **[1 mark]** plus description or comment (*e.g.* mistakes may be made / time consuming / copied from paper forms) **[1 additional mark]**.
- Data can be captured directly from online questionnaire **[1 mark]** plus description or comment (*e.g.* software on server stores responses in database / mention of method such as cgi scripts or server application) **[1 additional mark]**.
- OCR or description **[1 mark]** plus description or comment (*e.g.* machine reads the data / characters are read and converted to text file) **[1 additional mark]**.
- OMR or description **[1 mark]** plus description or comment (*e.g.* machine reads marks on the paper / method such as reflected light / comment about how some of the questions have to be specially set up so can be read by OMR method) **[1 additional mark]**.

Reward other acceptable answers with the approval of your team leader.

- (c) **Data from this database may be distributed to third parties. Discuss why the members might be concerned about this.** **[4 marks]**

[0 marks] inappropriate answer.

[1 to 2 marks] limited understanding. If the factor/factors are only identified award only *[1 mark]*.

[3 to 4 marks] relevant factor/factors are recognised and developed in some depth. At the top end an expression of opinion/likelihood/consequence/conclusion is provided.

Answers may include:

- personal information may be used for marketing purposes
- receive junk mail / spam
- spammers receive valid email addresses
- members do not want their details made public
- may help criminals
- how it may help criminals – *e.g.* times when house is unoccupied
- personal information may harm job applications
- personal information may be passed to potential employers
- information about illnesses / medication may cause problems with life assurance.

Reward other acceptable answers with the approval of your team leader.
