

MARKSCHEME

May 2003

INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY

Standard Level

Paper 2

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SECTION A

1. (a) **State *two* conclusions which can be drawn from the data included in the table.**

**[2
marks]**

Award [1 mark] for each conclusion stated up to a maximum of [2 marks].

- www.CNN.com experienced the highest percentage of growth.
- www.WashingtonPost.com and www.LATimes.com experienced the same percentage of growth.
- www.MSNBC.com experienced the lowest percentage of growth.
- The number of minutes which is recorded increased in all instances between 1.3 and 1.4 minutes over the year period.

Reward other acceptable answers. Do not reward conclusions that cannot be drawn from the data given. Do not reward answers that merely state facts given in the data (e.g. all sites recorded an increase over the period given)

- (b) **Identify *two* reasons why the majority of the web news audience is people in their 30s.**

**[2
marks]**

Award [1 mark] for each reason identified up to a maximum of [2 marks].

- People in their 30s are skilled in using the Internet and accessing online newspapers.
- People in their 30s have access to computing hardware and the necessary Internet access.
- People in their 30s are financially able to afford computing hardware and Internet access.
- People in their 30s are capable of setting up their home computers with Internet access.
- People in their 30s are more comfortable with reading online newspapers than people in older age groups.
- Many people in their 30s work in offices and use office facilities to access online news sources
- People in their 30s are more interested in news (reward ONLY if a specific type of news is stated – e.g. financial, travel, sport, etc.)

- *Reward other acceptable answers.*

- (c) **Explain *two* reasons why online newspapers are not yet profitable even though some charge subscription fees.**

**[4
marks]**

Award up to [2 marks] for each explanation up to a maximum of [4 marks]. Award only [1 mark] for a partial explanation.

- There is a significant investment in web page development and maintenance.
- There is significant cost in hosting web pages.
- There is insufficient advertising on the web pages to cover costs.
- Subscription fees do not cover the cost of the web page.
- The additional staff required to produce daily web pages adds significantly to the costs.
- Few will subscribe to online news when free online news sites are available

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- *Reward other acceptable answers. Do not reward answers that merely state people prefer to get their news by traditional means.*

(d) Describe *two* advantages of online newspapers over printed media or television.

**[4
marks]**

Award up to [2 marks] for descriptions of advantages of online newspapers over printed media or over television sources up to a maximum of [4 marks]. Award only [1 mark] for a partial description.

Advantages of online newspapers over printed media OR TV (does not have to be both)

- They can be made available to readers more rapidly than printed media.
- They are available online long after it has been published.
- They can contain links to other news stories.
- They can contain more objective content through text rather than film footage shown on TV.
- TV is passive – user has no choice of what sequence to watch.
- Online news is available in different languages/ from different parts of the world, giving a different perspective or bias.
- Online news can use multimedia to make the presentation more interesting/versatile
- Online news may be more environmentally friendly – must have justification for 2nd mark

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- *Reward other acceptable answers.*

(e) Discuss *two* ethical practices which the newspaper companies should consider when providing online news. A weighing-up of arguments is required in the response.

**[8
marks]**

Award up to [3 marks] for each ethical practice which is fully discussed up to a maximum of [6 marks]. Award a maximum of [1 mark] for each ethical practice if it is only stated. Award [1 mark] for each piece of evidence of weighing up and/or evaluation of any of the arguments or any combination of the arguments up to a maximum of [2 marks]. Award a maximum of [8 marks].

- The newspaper must acknowledge the authors of the articles.
- The newspaper company must provide accurate reporting of the news.
- Photo images can be edited but must still be true.
- The newspaper must not be biased by the advertising companies which support it financially.
- The newspaper only reports news articles which are appropriate for its target audience.
- The news site is available worldwide and thus should have some form of balance, although bias is still perfectly acceptable (all news media have an inbuilt bias)
- Careful consideration should be given to the data collected from site visitors (e.g. subscription details and/or tracking cookies)

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- *Reward other acceptable answers. Answers that raise issues of a general nature and do not refer to online sources specifically (e.g. plagiarism/copyright issues that apply to all media) may only be awarded a maximum of 1 mark. Further marks can only be awarded for direct and specific reference to online news media.*
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SECTION B

2. **NOTE: This question implies IT-related monitoring throughout. Only reward answers relating to non-IT monitoring (e.g. video surveillance, personal monitoring) if the answer refers to subsequent IT-related processing or storage.**

2. (a) **Outline two pieces of information which could be collected by monitoring the activities of employees and how each piece of information could be collected.**

[4 marks]

Award up to [2 marks] for each description up to a maximum of [4 marks]. Award only [1 mark] for a partial description.

- Length of time spent on telephone conversations monitored by software which records the telephone number and length of time.
- Amount of computer activity and use of the keyboard by software which records keystrokes.
- Surfing to sites which are unrelated to company matters by recording the URL of the site which the employee visited and the length of time on the site.
- The content of private e-mail messages read by the employer from the backup tape on the computer network.
- Viewing the content of the employee's computer monitor at any time by using special software installed for this purpose.
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- *Reward other acceptable answers.*

(b) **Describe one advantage of employee monitoring for the employee and one advantage for the employer.**

[4 marks]

Award up to [2 marks] for the advantage of employee monitoring for an employee and [2 marks] for an advantage of employee monitoring for the employer up to a maximum of [4 marks]. Award only [1 mark] for a partial description.

Advantage for the employee

- recorded evidence in instances where the employee has been working on task
- recorded evidence of reliable work for promotion purposes.

Advantage for the employer

- increased productivity of the employees
- ensuring company resources are used for the company purposes
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Reward other acceptable answers.

(c) **Discuss three actions that an employer could take in implementing an employee monitoring system without causing the employees to feel that their privacy is invaded. A weighing-up of arguments is**

required in the response.

**[12
marks]**

Award up to [3 marks] for each action which is fully discussed up to a total of [9 marks]. Award a maximum of [1 mark] for each strategy which is only stated up to a maximum of [3 marks]. Award [1 mark] for each piece of evidence of weighing up and/or evaluation of any of the arguments or any combination of the arguments up to a maximum of [3 marks]. Award a maximum of [12 marks].

- The employer can publish the company policy on employee monitoring.
- Clear company policies should be developed for using e-mail and Internet services.
- The employer can meet with employees to discuss any issues relating to employee monitoring.
- Information can be made available about what information is collected from monitoring processes and what is stored.
- Employees can be made aware that company policies are consistent with existing laws.
- Information about organizations for the protection of employee privacy can be made available.
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- *Reward other acceptable answers.*

3. (a) Describe two factors that could reduce productivity instead of increasing it when the computer network is introduced in the school.

**[4
marks]**

Award up to [2 marks] for each factor fully described up to a maximum of [4 marks]. A full description must include both aspects of the cause of reduced productivity – what causes it, and why. Award only [1 mark] for a partial description.

- Distractions: tinkering with files saved in file servers, answering e-mail, exploring the web, playing interactive games, etc.
- Inadequate user training and support: network system is introduced into the workplace without any consideration of the way people work and interact.
- Rapid changes: staff spend hours learning complex programs that are upgraded in a few months.
- Laziness: students produce lower quality work because they can now “copy and paste” an entire work from the Internet.

Reward other acceptable answers.

(b) The headteacher is concerned that unauthorised software may be installed on the network. Explain two reasons why software may be regarded as unauthorised.

**[4
marks]**

Award up to [2 marks] for each reason fully explained up to a maximum of [4 marks]. Award only [1 mark] for stating a reason without an explanation.

- The school has not bought a licence for the software installed by the user.
- The software is shareware but not authorised by the network manager.
- Personally owned software has been installed in school owned computers.
- Software may introduce non-standardisation.
- Software may facilitate unauthorised data changes (e.g. by-pass audit log, read passwords, etc.)
- Software may take up excessive space on the network server, causing problems to users.

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- *Reward other acceptable answers. Do not reward answers that refer to software quality – the candidate must refer to why the software is UNAUTHORISED.*

- (c) **The school is considering producing a code of conduct for the use of networked computers and the Internet. Discuss *one* appropriate rule which must be included in such a code to prevent computer misuse, and *two* ethical factors that must be taken into account when the Code of Conduct is produced.**

**[12
marks]**

Award up to [3 marks] for each rule fully discussed. Award a maximum of [1 mark] if the rule is only stated. Award up to [3 marks] for each ethical consideration that is fully discussed up to a maximum of [6 marks]. Award a maximum of [1 mark] if the consideration is only stated. Award up to [3 marks] for weighing-up the importance of arguments. Maximum total for this part of the question is [12 marks].

Rules to prevent computer misuse

- Members are allowed to use only those computer resources, data or communication facilities that have been allocated to them.
- Computer resources may be used only for properly authorised purposes (e.g. not accessing unauthorised pages).
- Users do not have authorisation to grant anyone else access to the facilities that they have been given.
- Members of the school may not access, alter, erase or add to computer material which has not been generated by them, unless they are authorised to do so by the originator of the material.
- Members of the school may not use computer systems or networks in such a way as to compromise the integrity or performance of the systems or networks (e.g. downloading large files, executing unknown programs that might be infected with viruses, etc.).
- Accept answers referring to banning of unauthorised software, with an explanation.

Ethical factors to take into account to produce the code of conduct

- Privacy: if computer monitoring is used to track and record network use, students and staff must be informed.
- Control on the use of computers and the Internet should not threaten personal privacy. e.g. reading personal e-mail messages to punish students or to fire staff is unacceptable.
- If teachers are required to use IT as a teaching tool, they must be trained in the use of such tools. Otherwise, the teacher might find his/her job de-skilled by IT.
- Rules for the use of the Internet must be published before taking any action against those who misuse it.
- The proper operation of the IT equipment and software should be guaranteed in order to avoid people losing productive time working around software bugs and recovering data from system crashes.

Reward other acceptable answers.

4. (a) **Describe *one* problem caused by a human disability (educational or physical) that this computer may help to overcome.**

**[2
marks]**

Award up to [2 marks] for a full description of a problem (i.e. both the disability and the problem it may cause in the use of a computer). Award only [1 mark] if the problem is only stated.

- A visually-impaired person (blind or some other visual problem) would have difficulty reading the screen on a conventional computer.
- A person who suffers from dyslexia or some similar visual comprehension problem would have difficulty interpreting information from the screen of a conventional computer.

Reward other acceptable answers.

- (b) Describe how this computer may help to overcome the problem you have described in part (a). [2 marks]**

Award up to [2 marks] for a full description of the help given (i.e. both the effect and how the computer achieves that effect). Award only [1 mark] for a partial description with only one aspect described.

- Visual medical problems would be overcome by the speech being synthesised and read aloud to the user.
- Visual comprehension problems would be overcome by the speech being synthesised and read aloud to the user.

Reward other acceptable answers. Do not reward answers that are not specific to the features of this type of computer (e.g. portability, sound synthesis, low cost)

- (c) Discuss two policies which should be implemented to ensure widespread distribution of these machines to those who will benefit from them. [4 marks]**

Award [1 mark] for each of the descriptions below up to a maximum of [2 marks]. Award a further [1 mark] for some discussion of each policy. Maximum [4 marks].

- Developers might keep costs low by using low-cost components.
- Developers might license their software for general use waiving copyright fees.
- Developers might sell the computer on a non-profit basis.
- The computers may be made available through hospitals (or other agencies used by the disabled).
- The computer should contain synthesisers in a variety of languages.

Reward other acceptable answers.

- (d) Discuss three social impacts that could arise from the availability of inexpensive online access to the web across the global society. [12 marks]**

Award up to [3 marks] for each impact which is fully discussed up to a total of [9 marks]. Award a maximum of [1 mark] for each impact which is only stated up to a maximum of [3 marks]. Award [1 mark] for each piece of evidence of weighing up and/or evaluation of any of the arguments or any combination of the arguments up to a maximum of [3 marks]. Award a maximum of [12 marks].

- Information about educational and employment opportunities can reach information remote communities.
- Access to education can help to reduce illiteracy.
- Greater employment possibilities in poor communities encourages the development of the local and national economies.
- Accept answers relating to the visually impaired or other disabilities covered in earlier parts.

Reward other acceptable answers. Answers that raise issues of a general and are not specific to global use (e.g. general Internet issues such as plagiarism, addiction, health issues) may only be awarded a maximum of 1 mark. Further marks can only be awarded for direct and specific reference to global use (e.g. education in LDCs, crop yields in rural communities, increased cross-communication for disabled people worldwide).

5. (a) State two uses of IT in creating films.

**[2
marks]**

Award [1 mark] for each point stated.

- creating virtual actors
- creating special effects (visual and/or sound only [1 mark])
- editing film
- taking film footage either analog or digitally
- enhancing old movies digitally

Reward any other acceptable answers.

(b) Describe three social impacts of using IT in film creation.

**[6
marks]**

Award up to [2 marks] for each social impact fully described up to a maximum of [6 marks]. Award only [1 mark] for a partial description.

- There may be changes in the employment prospects of actors due to the use of virtual actors.
- Realistic films are cheaper to make due to advances in the technology resulting in increased profits/ can be more expensive due to a dependence on technology. (case can be argued either way)
- The use of special effects makes it easier to produce unrealistic movies which gives movie-goers, especially young people, a distorted view of reality.
- The increased use of technology in movie production has caused a change in the skills required for many jobs in the industry.
- A new generation can enjoy old movies because digitally enhanced movies are of interest in the modern age.
- The ready availability of hardware and software for film editing means that amateurs (e.g. schools) can produce quality films where it was not feasible in the past.
- Dangerous scenes can be filmed without putting actors/extras in danger.

Reward any other acceptable answers.

(c) Discuss three ethical considerations which emerge from using these new technologies in film making.

**[12
marks]**

Award up to [3 marks] for each ethical consideration which is fully discussed up to a total of [9 marks]. Award a maximum of [1 mark] for each consideration which is only stated. Award [1 mark] for each piece of evidence of weighing up and/or evaluation of

*any of the arguments up to a maximum of [3 marks]. Award a maximum of [12 marks].
Accept repeated answers from (b) if the answers are explained in an ethical context.*

- Films having unrealistic effects must be targeted at a suitable age range because young viewers may have adverse psychological effects from the film and may draw an inappropriate response from them.
- Creating a virtual actor of a real actor who has died may be a violation of their intellectual property rights.
- Real live film clips (e.g. an interview) can be edited in such a way that the editor can produce an effect which is contrary to the original film clip (e.g. a statement in an interview which was not said).
- A film company needs to consider the ethical implications for their staff of using IT (e.g. Are they capable of being retrained? Can the staff cope with retraining?)
- Films are being digitally pirated.

Reward any other acceptable answers.
