

# **MARKSCHEME**

**May 2002**

## **INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY**

**Standard Level**

**Paper 2**

**SECTION A**

1. (a) **Define *desktop publishing (DTP)* (paragraph 2).** **[2 marks]**

*(Award up to [2 marks] for a clear definition of desktop publishing. Award only [1 mark] for an incomplete definition.)*

**Desktop publishing:** the use of **page-layout software** to combine various source documents (text, graphs, pictures, images, *etc.*) into a coherent visually appealing **printed publication**.

- (b) **Describe *two* skills that professional users of desktop publishing software must have.** **[4 marks]**

*(Award up to [2 marks] for each skill fully described to a maximum of [4 marks]. Award only [1 mark] for each skill if it is partially described or if it is only stated.)*

- To master touch typing
- To know how to use standard word processors and graphic programs to produce and/or edit source documents.
- To know how to use scanners to transform photos and hand drawn images into computer – readable documents.
- To know page layout principles to produce appealing publications.
- To know communication principles to turn into printed pages ideas, messages, news, *etc.*
- To have some artistic background because, with or without a computer, publishing is an art.
- To know how to manage the technical vocabulary and the numerous commands that DTP software uses to control the layout of text, graphics and other elements on pages.
- To know how to manage OCR software, and specific input and output devices (graphic pads, laser printers, high resolution monitors, *etc.*).

*Reward other reasonable answers.*

- (c) **Explain *two* reasons why long negotiations might have been required before the new DTP system could be introduced in the Printex Publishing Company.** **[6 marks]**

*(Award up to [3 marks] for each reason fully explained up to a maximum of [6 marks]. Award only [1 mark] for each reason outlined but not explained.)*

- The National Union of Journalists was worried about printers being fired because of the introduction of the new system.
- The management of the PPC tried to convince the National Union of Journalists that the new system would not affect workers because they would be re-trained.
- The National Union of Journalists was worried about salary reductions for those whose skills were out-of-date due to the introduction of the new system.
- The management of the PPC was trying to negotiate worker's conditions with the National Union of Journalists in order to shorten the time for the implementation of the new system for economic reasons (uncertain market, difficulty in keeping costs low, etc.)

- (d) **Discuss *two* positive social effects that the introduction of DTP software had on the publishing industry.** **[8 marks]**

*(Award up to [3 marks] for a full discussion of each positive social effect up to a maximum of [6 marks]. If each social effect is stated but not discussed, award a maximum [1 mark] per effect. Award up to [2 marks] for the weighing up the importance of arguments. Maximum total for this part of the question is [8 marks].)*

- DTP is cost effective: traditional publishing was expensive and time-consuming.
- Traditional method of printing was error prone. If mistakes were made, the process was even more expensive and time consuming in rectifying the errors.
- DTP software is safer for workers. It doesn't use dangerous machines and it is healthier because it doesn't use dangerous raw materials or substances harmful to humans.
- The use of DTP software allows the decentralisation of the whole process to the extent that different people located even in different countries can make each step in the publishing process. This also may allow for less ethnocentrism.
- DTP allows newspapers to publish last minute news, something that traditional publishing could not even think of.
- DTP combined with telecommunications offers much greater speed of communication globally.
- DTP allows for compression of space and time in the process.

*Accept other reasonable answers.*

**SECTION B**

*(Answer **two** questions. Candidates should note they are unlikely to achieve high marks for part (c) of each question if the answer is not developed and presented in a planned and structured way.)*

2. (a) **Outline how an Automatic Teller Machine (ATM) works.** **[2 marks]**

*(Award up to [2 marks] for an outline of ATMs. Award only [1 mark] for a simple statement.)*

- a specialised terminal that allows people access to their bank account for statements and/or cash withdrawals.
- a specialised terminal linked to a bank's main computer network that authorises and validates transactions and issues cash and/or statements.

(b) **Describe *three* electronic fund transfer operations that can take place *without* using an ATM.** **[6 marks]**

*(Award up to [2 marks] for each full description up to a maximum of [6 marks]. Award only [1 mark] for each operation stated but not described.)*

- People have salary deposited automatically in their cash or savings accounts.
- Bank customers have bills paid automatically out of their accounts.
- Many banks allow their customers to use their home computers or their touch-tone phone to transfer money between accounts, get their check balance, pay bills, *etc.*
- E-commerce uses electronic fund transfer to pay purchases made through the Internet.

*Reward any other acceptable answer.*

**(c) Discuss *three* social implication (positive *or* negative) of e-commerce. [12 marks]**

*(Award up to [3 marks] for a full discussion of each social implication up to a maximum of [9 marks]. If each implication is stated but not discussed, award a maximum [1 mark] per implication. Award up to [3 marks] for weighing up the importance of arguments. Maximum total for this part of the question is [12 marks].)*

- E-commerce is gradually changing the traditional shopping habits. From their own home, people can browse, choose, order and pay all kind of goods. Options for the customer are unlimited.
- Companies are moving fast to e-commerce. The potential market now is the whole world. This poses new challenges for companies, because customers must be kept by offering an efficient service in a very competitive market.
- Customers can compare products from different companies, from different countries instantly. They can preview the products before making any purchase though they cannot try them beforehand. They are not able to ‘see’ the company with which they are dealing.
- If the company doesn’t offer a secure site, personal and financial data can be accessed by unwanted people who might cause problems to the customer, like stealing the Credit Card number for illegal use, spamming, selling personal data to third parties, *etc.*
- E-commerce may produce ‘the death of the high street’ with a growing number of people buying online from home.

*Reward other acceptable answers.*

(Answer **two** questions. Candidates should note they are unlikely to achieve high marks for part (c) of each question if the answer is not developed and presented in a planned and structured way.)

3. (a) State **one** software application which is necessary for producing advertisements in print and **one** software application which is necessary for producing advertisements on the World Wide Web. [2 marks]

(Award [1 mark] for one software application given for printed advertisements and [1 mark] for one software application given for web advertisements up to a maximum of [2 marks].)

printed advertisements

- desktop publishing software
- image editing software
- scanning software

Reward other acceptable answers.

web advertisements

- web page design program
- a program which will create animated gifs or other animations

Reward other acceptable answers.

- (b) Describe **three** differences between advertising found in magazines and newspapers and advertising found on Web pages. [6 marks]

(Award up to [2 marks] for each difference fully described up to a maximum of [6 marks]. Award only [1 mark] for each difference stated but not described.)

- Advertising on the Web can contain animations which are appealing to some viewers.
- Printed advertisements can contain higher quality photos and better layout which can influence purchasing.
- Advertising on the Web may push technology to place unsolicited advertising.
- Advertising on the Web can be linked to other Web sites for immediate purchasing.
- Advertising on the Web is linked to company Web sites providing more information for the buyer.

Reward any other acceptable answer.

- (c) **Discuss *three* ethical considerations a company must take into account before placing an advertisement on the Web.** **[12 marks]**

*(Award up to [3 marks] for a full discussion of each ethical consideration up to a maximum of [9 marks]. If each consideration is stated but not discussed, award a maximum [1 mark] per consideration. Award up to [3 marks] for weighing up the importance of arguments. Maximum total for this part of the question is [12 marks].)*

*(Award only [1 mark] for a partial explanation.)*

- Will the advertisement offend anyone who accidentally surfs the site?
- Is the advertisement appropriate for the audience which usually views this site?
- Does the advertisement contain reliable information?
- Have copyright laws been observed when using other people's work? (music, songs, pictures, text, etc.)

*Reward other acceptable answers.*

(Answer **two** questions. Candidates should note they are unlikely to achieve high marks for part (c) of each question if the answer is not developed and presented in a planned and structured way.)

4. (a) **State *two* ways in which children can locate information on the World Wide Web for their school work.** [2 marks]

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

- go to a web site which is a ‘homework’ helper for children;
- use a search engine especially designed for children;
- click on the links found on school’s web site to navigate to appropriate Web sites.

Reward other acceptable answers.

- (b) **Describe *three* health issues for children related to the intensive use of computers and describe how each of them can be avoided.** [6 marks]

(Award up to [2 marks] for each health issue fully described up to a maximum of [6 marks]. Award only [1 mark] for each health issue stated but not described.)

**Health risks and ways of avoiding them:**

- Eye strain can be avoided by using such measures as purchasing an appropriate monitor, placing the monitor in a suitable position, providing suitable lighting in the room, frequent breaks looking away from the monitor.
- Repetitive stress injury (RSI) can be avoided by using such measures as providing the appropriate chair and table height so that arms are aligned at 90 degree angles to the keyboard, purchasing smaller keyboards and mice, big trackballs.
- Pain in the neck and back due to lack of movement can be assisted by purchasing cordless keyboards and mice which allow some freedom of movement; providing software to prompt breaks away from the computer.
- Tingling in the fingers, numbness can be avoided by limiting the amount spent on playing computer games such as Nintendo.
- Back aches can be avoided by such measures as purchasing an appropriate computer chair or placing a rolled towel at the small of the child’s back, and placing of the legs at 90 degree angles.

Reward other acceptable answers.



- (c) **Children often play computer games and online interactive games during their leisure time. Discuss three social effects which computer games could have on children other than ergonomic or health issues.** **[12 marks]**

*(Award up to [3 marks] for a full discussion of each social effect up to a maximum of [9 marks]. If each social effect is stated but not discussed, award a maximum [1 mark] per effect. Award up to [3 marks] for weighing up the importance of arguments. Maximum total for this part of the question is [12 marks].)*

- Some games are violent and can influence children to perform violent acts.
- Computer games are expensive and some children cannot afford them.
- Computer games are not translated in to all foreign languages.
- Many computer games require extra expense in game control devices and/or Internet connection.
- Children can become addicted to playing certain games.
- Extensive use of computer games can make children become insular, possibly antisocial and unable to mix with peers.

*Reward other acceptable answers.*

(Answer **two** questions. Candidates should note they are unlikely to achieve high marks for part (c) of each question if the answer is not developed and presented in a planned and structured way.)

5. (a) **Outline two possible uses of WANs (wide area networks) in health care. [2 marks]**

(Award [1 mark] for each item indicated below up to a maximum of [2 marks]. A brief account is required, not simply a list. Award a maximum [1 mark] if items are only listed.)

- telemedicine – counselling via the Internet, remote surgery
- electronic health record keeping
- electronic prescription
- clinical messaging e.g. sending radiology or pathology reports between doctors

Reward other acceptable answers.

(b) **File compression is often used when large files are sent across networks. Explain two benefits and one limitation of using file compression when sending medical information. [6 marks]**

(Award up to [2 marks] for each complete explanation of each benefit and for the limitation up to a maximum of [6 marks]. Award only [1 mark] for each one that is only stated.)

**Benefits**

- File compression allows large files such as X-rays to be sent across networks. Without compression the files would be too large to download.
- High resolution picture of a wound or other medical visible symptom or sign can be sent for diagnosis between doctors.
- Medical studies in graphical form, e.g. visual studies, ear studies, scans of pregnancy, can be sent across a network.

**Limitations**

- Compression may result in loss of detail or loss of colour.
- This could result in an inaccurate diagnosis e.g. loss of detail in an X-Ray or difficulty in making the right diagnosis e.g. loss of colour in coloured scans or coloured photographs.
- Recipient of the file may not have the appropriate software to decompress it.

Reward other acceptable answers.

- (c) **Discuss *three* social impacts (positive *or* negative) resulting from the possibility of sending personal health records through a WAN.** **[12 marks]**

*(Award up to [3 marks] for a discussion of each of three impacts up to a maximum of [9 marks]. Award [1 mark] if the impact is only stated. Award up to [3 marks] for evaluating the arguments. These three marks could be awarded for: (i) weighing up the positive and negative aspects of each impact and deciding if the advantages outweigh the disadvantages, (ii) commenting on the overall importance of each of the three impacts, (iii) deciding on the importance of each impact and indicating a hierarchy of importance. Maximum total for this part of the question is [12 marks].)*

**Positive Impacts**

- Eliminates duplication of testing *e.g.* central access to results of tests.
- Allows instant access to medical records in the case of an emergency.
- Provides portability – patients can take their electronic records anywhere they go.
- Shareability – records can be accessed by many programs.
- Allows records to be sent anywhere in the world with speed and accuracy.
- Medical reports can be produced quickly based on the information transmitted through the WAN.

**Negative impacts**

- Security – how secure are the records? Could hackers obtain this information?
- Networks are potentially accessible to viruses, especially if email is provided.
- Data may become inaccessible if the network ‘goes down’.
- Retraining will be needed.

*Reward other acceptable answers.*

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