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MARKSCHEME

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INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY

Higher and Standard Level

Paper 1

8 pages

Examiners should be aware that in some cases, candidates may take a different approach, which if appropriate should be rewarded. If in doubt check with your Team Leader.

In the case of an "identify" question read all answers and mark positively up to the maximum marks. Disregard incorrect answers. In the case of a "describe" question, which asks for a certain number of facts *e.g.* "describe two kinds", mark the **first two** correct answers. This could include two descriptions, one description and one identification, or two identifications.

1. **(a)** **(i)** **Identify the operating system used in this computer system.** *[1 mark]*

Windows (XP Home Edition)

[1 mark] for identifying the correct system.

(ii) **State the amount of secondary storage in this computer system.** *[1 mark]*

160 GB (must give units)

[1 mark] for stating the correct amount of secondary storage.

(b) **Describe the purpose of the following in the production and maintenance of the web pages:**

(i) **HTTP** *[2 marks]*

- hypertext transfer protocol
- rules used for transmitting/interpreting web pages
- used for HTML files.

[1 mark] for each point, up to a maximum of [2 marks].

(ii) **FTP.** *[2 marks]*

- file transfer protocol
- rules used for sending files over internet
- used when uploading pages to server.

[1 mark] for each point, up to a maximum of [2 marks].

(c) **If Barbara Smith were to purchase the computer in the advertisement, explain why the system is unlikely to meet her IT needs within a few years.** *[4 marks]*

Answers may include:
- applications require more hard disk space and RAM over time as they become more complete
- software makes more demands on system resources over time
- this will require a faster processor.

[4 marks]
A clear, detailed and balanced explanation plus relevant and practical coverage of some technical details.

[2-3 marks]
A reasonable explanation, including some comment on technical issues, although the answer may be unbalanced and lack appropriate reasoning at the bottom end of the band.

[1 mark]
A limited response that indicates very little understanding of the topic.

2. **(a)** **Define the term *multimedia*.** *[2 marks]*

- a presentation/production
- combination of more than one medium type
- at least two examples such as text, images, movies, animations, sound.

[1 mark] for each point up to a maximum of [2 marks].

(b) **Describe *two* methods that can be used to reduce the amount of disk space occupied by a multimedia training package.** *[4 marks]*

- method: compression.
- description: reduces the number of bytes used/reduces the amount of detail stored.

- method: reduce quality.
- description: less data is stored for low res/low quality productions.

- method: use small window on screen.
- description: this requires less data for display.

[1 mark] for each method, up to a maximum of [2 marks], plus an additional [1 mark] for each description, up to a maximum of [2 marks].

(c)   Explain why some organizations prefer to train their staff using a multimedia training package instead of providing face-to-face training with a human instructor.   *[4 marks]*

Answers may include:
- multimedia presentations are more consistent than a human trainer
- they will be the same for each participant
- they have more impact because they combine many different sensory inputs
- they can be made to a high professional standard
- they can be delivered anywhere with no need for a trainer to travel
- there can be cost savings.

[4 marks]
A clear, detailed and balanced explanation of the benefits of multimedia training plus relevant and practical coverage of some technical details.

[2-3 marks]
A reasonable explanation of training issues, including some comment on technical matters, although the answer may be unbalanced and lack appropriate reasoning at the bottom end of the band.

[1 mark]
A limited response that indicates very little understanding of the topic.

3.   **(a)**   **Identify** *two* **reasons why the images would be stored in JPEG (jpg) format.**   *[2 marks]*

- a standard for storing image files
- involves compression of image file
- compression needed for web images
- to reduce download times/increase download speeds.

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

(b)   **Describe** *two* **advantages of advertising on web sites instead of using an advertising brochure.**   *[4 marks]*

- can be updated immediately
- printed advertising brochures take a long time to produce or modify
- web sites can be used to record customer information
- brochures are one-way information
- web sites have worldwide coverage
- brochures localized circulation
- web sites can use multimedia/animations.

[1 mark] for each advantage identified up to a maximum of [2 marks] plus an additional [1 mark] for each description up to a maximum of [2 marks].

(c) **The *Old-but-New* car dealership has decided to produce its own web advertisements rather than use a specialist web design company. Explain why the dealership has taken this decision.** *[4 marks]*

In house:
- this is cheaper because no consultancy fees to be paid
- they have total control over the design and content of the web site
- they have total control over any data that is obtained from the web site.

Outsourcing:
- no need to have specialist skills in house
- external consultants may have better web design skills
- savings could be made if using pre-existing designs that the consultants have already used.

General:
- time considerations – which method will produce results quicker?

[4 marks]
A clear, detailed and balanced explanation of in house versus outsourcing plus relevant and practical coverage of some technical details.

[2-3 marks]
A reasonable explanation of the issues of in house versus outsourcing, including some comment on technical issues, although the answer may be unbalanced and lack appropriate reasoning at the bottom end of the band.

[1 mark]
A limited response that indicates very little understanding of the topic.

4. (a) **Define the term *artificial intelligence*.** *[2 marks]*

- behaviour of a machine that emulates human intelligence
- ability to learn
- ability to match patterns
- ability to adapt behaviour
- shows ability to reason.

[1 mark] *for each point, up to a maximum of* *[2 marks]*.

(b) **Describe how Clippy could tell that the user was writing a letter.** *[4 marks]*

- method: Clippy knows it is Word you have opened.
- reason: this narrows down the possible intentions of the user.

- method: identifies the salutation (Dear xx).
- reason: matches this against pre-existing salutations.

- method: identifies the address block.
- reason: standard layout of addresses/recognizes postcode/zip code/other format.

- method: sign off.
- reason: identifies words such as "Yours sincerely".

[1 mark] for each method, up to a maximum of [2 marks], plus an additional [1 mark] for each reason, up to a maximum of [2 marks].

(c) **Explain why it is possible that Eliza in this conversation is not a human being but really a computer running artificial intelligence software.** *[4 marks]*

Answers might include:
- user questions never properly answered
- answers could be made up from user questions
- answers could be attaching user questions to random expressions
- answers often completely irrelevant
- could be human as real words used
- a supported conclusion.

[4 marks]
A clear, detailed and balanced discussion of how the conversation might be judged plus relevant and justified conclusions.

[2-3 marks]
A reasonable discussion of how the conversation might be judged, including some comment on what constitutes real/machine intelligence, although the answer may be unbalanced and lack appropriate reasoning at the bottom end of the band.

[1 mark]
A limited response that indicates very little understanding of the topic.