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MARKSCHEME

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INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY

Higher Level

Paper 3

7 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. In the case of an "explain" question, which asks for a specified number of explanations *e.g.* "explain two reasons", mark the **first two** correct answers. This could include two full explanations, one explanation, one partial explanation, *etc*.

"ITGS terminology refers to both the IT technical terminology and to the terminology related to social and ethical impacts."

1.   **Describe** *two* **multimedia features that could be included on Carmen's web site.**   *[4 marks]*

- examples of products (images) with descriptions (text)
- animations *i.e.* showing pictures being combined/stitched together
- voice commentary
- music included in products
- animations/video demonstrations
- RSS (Really Simple Syndication)
- interactive applets.

Award [1 mark] for each multimedia element in a particular feature identified up to a maximum of [2 marks] per feature. Award an additional [1 mark] for the relevant description of each feature up to a maximum of [2 marks].

2.   (a)   Explain how SSL (Secure Socket Layer) *and* encryption *(line 58)* are used to ensure that confidential data can be sent across the Internet when a customer purchases a product from the *Foto Creativa* web site.   *[6 marks]*

The following points must be made with clear reference to the Foto Creativa web site.

SSL
- protocol
- cryptographic
- works at the transport layer
- added on to other transport protocols such as HTTP or FTP
- prevents eavesdropping
- prevents forgery
- can examine data travelling in both directions
- SSL certificate provide the user with not forgeable proof of the identity of the website you are connecting to.
- SSL is being replaced by a more modern Protocol called TLS (transport Layer Security)

Encryption
- transformation of data
- to a form unreadable by unauthorized people
- uses a key
- key used with algorithm to encrypt/decrypt
- key only known to authorized recipient
- public key used to encrypt
- private key used to decrypt.

[1–2 marks]
A limited response that indicates very little understanding of either SSL or encryption and uses little or no appropriate subject terminology.

[3–4 marks]
A reasonable explanation that demonstrates some understanding of SSL and encryption. Some relevant examples and appropriate subject terminology are used within the response.

[5–6 marks]
A detailed explanation of SSL and encryption with examples and/or evidence of research with appropriate subject terminology used throughout the response.

(b) **Sergio has recommended to Carmen that she use open source software instead of a commercial web content management system (Web CMS) to develop the web site. Analyse the possible consequences of this recommendation** *(lines 60–61, 98).* *[8 marks]*

Answers may include:
- the total cost might be less because open source software is free
- open source software is customizable
- open source software allows anyone to change the source code
- open source software may be updated more regularly than commercial software
- some open source products can be of better quality than commercial software due to larger developer base and testers
- popular open source products have many freelance developer who can modify source code
- altering open source software requires a high level of programming expertise
- open source software may be less well tested than commercial products
- open source software comes with no guarantees
- open source software comes with no support – many open source products provide support (at a cost)
- the quality of open source software may or may not be as good as a commercial equivalent
- there may be compatibility issues
- examples of open source software are quoted, *e.g.* OpenCms.

[1–2 marks]
A limited response that indicates very little understanding of the topic and uses little or no appropriate subject terminology.

[3–5 marks]
A reasonable analysis that demonstrates some understanding of the topic. Some relevant examples are used to support analysis within the response. There is some use of appropriate subject terminology in the response. At the lower end of the band the answer may be descriptive and lack detail.

[6–8 marks]
To enter this band, there must be a clear, detailed analysis of this issue which demonstrates a thorough understanding of the topic. There should be too an understanding that open source software allows access to program source code and the consequences of that. Relevant examples are used to support analysis within the response. There is appropriate subject terminology throughout the response.

3.   **Discuss how e-marketing techniques can be used to promote *Foto Creativa's*
      web site and its products** *(lines 62–73).*

      **Use information from the case study and give examples of techniques used by the
      companies that you have investigated.**   *[12 marks]*

      Answers may include:
      - sign up customer for short period – may encourage longer term relationship
      - use of Internet methods such as *Google* AdWords
      - web site optimization – make it easy for customer to see what is being looked for,
        plus other ideas
      - analytical tools – these are widely available – allows focussed campaigns
      - search engine optimization – may require knowledge or payment
      - domain name choice – may be something to do with what the company does
      - internal links
      - to direct attention to promotions
      - exchange links with other web sites – requires contacting other companies
      - post information on other web sites such as blogs/forums/mailing list – may be
        dumped as spam
      - pop ups – these can be irritating and might be counterproductive
      - registering on social networking sites (*Facebook*, *Twitter*)
      - RSS options for new updates
      - bulk emailing (could be irritating and qualified as spam).

Opinion discuss, evaluate, justify, recommend and to what extent	**0**	*No knowledge or understanding of IT issues and concepts or use of IT terminology.*
	1–3 marks	*A brief and generalized response with very little knowledge and understanding of IT issues and concepts with very little use of IT terminology.*

	4–6 marks	*A response that may include opinions, conclusions and/or judgments that are no more than unsubstantiated statements.*
		The response will largely take the form of a description with a limited use of IT terminology and some knowledge and/or understanding of IT issues and/or concepts.
		*If no reference is made to the information in the stimulus material, award up to **[4 marks]**.*
		    At the top end of the band the description is sustained.
		    At the lower end of the band a tendency towards fragmentary, common sense points with very little use of IT terminology.

	7–9 marks	*A response that demonstrates opinions, conclusions and/or judgments that have limited support.*
		The response is a competent analysis that uses IT terminology appropriately. If there is no reference to IT terminology the candidate cannot access this markband.
		There is evidence that the response is linked to the information in the stimulus material.
		    At the top end of the band the response is balanced, the response is explicitly linked to the information in the stimulus material and there may be an attempt to evaluate it in the form of largely unsubstantiated comments. There is also evidence of clear and coherent connections between the IT issues.
		    At the lower end of the band the response may lack depth, be unbalanced or tend to be descriptive. There may be also implicit links to the information in the stimulus.

	10–12 marks	***There must be evidence of independent research for candidates to reach this markband.*** *A detailed and balanced (at least one argument in favour and one against) response that demonstrates opinions, conclusions and/or judgments that are well supported and a clear understanding of the way IT facts and ideas are related.* *Thorough knowledge and understanding of IT issues and concepts.* *Appropriate use of ITGS terminology and application to specific situations throughout the response. **If there is no reference to ITGS terminology candidates cannot access this markband.*** *The response is explicitly linked to the information in the stimulus material.* *At the lower end of the band opinions, conclusions and/or judgment may be tentative.*

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