APPLIED INFORMATION TECHNOLOGY

Stage 3

WACE Examination 2011

Marking Key

Marking keys are an explicit statement about what the examiner expects of candidates when they respond to a question. They are essential to fair assessment because their proper construction underpins reliability and validity.

When examiners design an examination, they develop provisional marking keys that can be reviewed at markers' meetings and modified as necessary in the light of candidate responses.

Section One: Multiple-choice   **10% (20 Marks)**

Question	Answer
1	B
2	B
3	C
4	C
5	B
6	B
7	D
8	C
9	A
10	C
11	B
12	C
13	D
14	A
15	C
16	C
17	A
18	C
19	A
20	B

Section Two: Short answer **15% (30 Marks)**

Question 21 **(7 marks)**

(a) List **two** video file types. (2 marks)

Description	Marks
1 mark for each file type listed.	1-2
Total	**2**

Answers could include:
- Mpeg
- Avi
- Mov
- Flv
- Mp4

Any other recognised format.

(b) List **two** file types that are best suited for graphic files to be uploaded to a website.
(2 marks)

Description	Marks
1 mark for each file type listed.	1-2
Total	**2**

Answers could include:
- Jpeg
- Gif
- Png

Any other file type allowing compression.

(c) List **two** file types that are the result of compressing a wave audio file. (2 marks)

Description	Marks
1 mark for each file type listed.	1-2
Total	**2**

Answers could include:
- Mp3
- Mp4
- wma   Wmv.

Any other recognised format.

Question 22   **(4 marks)**

Identify **two** protocols and **two** network devices that could be used in establishing a small-scale network.

Description	Marks
Identifies **two** correct protocols.	1–2
Identifies **two** correct network devices.	1–2
Total	4

Answers could include:
Protocols
- TCP/IP
- HTTP
- HTTPS
- SMTP
- WAP

Network devices
- network interface card
- switch
- router
- modem.

Question 23   **(3 marks)**

Provide **three** advantages of using templates in developing websites.

Description	Marks
Provides **three** correct advantages.	1–3
Total	3

Answers could include:
- easy to update the design of the site
- consistency of site design
- minimises the skills needed to update the site.

Any other reasonable answer.

Question 24   **(6 marks)**

(a)   Provide **three** precautions you would take when purchasing a product online.

(3 marks)

Description	Marks
Provides **three** correct precautions.	1–3
Total	3

Answers could include:
- use credit card with a low limit
- ensure the site is secure (https or padlock symbol)
- use online shops that also have a physical presence
- use a recognised third party (e.g. Paypal) to make payment for you
- ensure your antivirus software is up to date.

Any other reasonable answer.

(b)   List **three** methods that can be used to protect your identity when using the internet.

(3 marks)

Description	Marks
Lists **three** correct methods.	1–3
Total	3

Answers could include:
*   ensure your antivirus software is up to date
*   never give out personal details
*   ensure shared images cannot be used to generate id photos
*   limit personal information on social networking sites.

Any other reasonable answer.

Question 25 (7 marks)

(a)   How would a company ensure that the information communication technology services supplied to it by an internet service provider will meet the requirements of its business? Why is this important?
(2 marks)

Description	Marks
Reason given for how a company ensures their information communication technology services are being met by their internet service provider.	1
Reason given for why having the requirements of a business met is important to the company.	1
Total	2

Answers could include:
*   naming of service level agreements
*   a reason why they are important – penalties, agreed service level, etc.
*   Service Level Agreement which outlined the contractual obligations of the service provider and any penalties.

(b)   List **two** ways in which industry can store large amounts of data for projecting trends and sales.
(2 marks)

Description	Marks
Lists **two** ways in which industry can store large amount of data.	1–2
Total	2

Answers could include:
*   data warehouses
*   data mining
*   data marts.

Note: Do not accept Excel.

(c)   List **three** ways of minimising the risk of data loss from your storage area network due to physical threats.
(3 marks)

Description	Marks
Lists **three** correct ways to minimize the risk of data loss.	1–3
Total	3

Answers could include:
*   off site back up
*   physical security system/locks/alarm/guards
*   power surge protectors.

Any other reasonable answer.

Question 26   (4 marks)

Explain the relationship between elements of design and creative design principles. Give an example of each to illustrate your explanation.

Description	Marks
Detailed explanation of the relationship between elements and creative principles of design.	2
Limited explanation of the relationship between elements and creative principles of design.	1
One example of an element and one example of a principle that illustrate the relationship between the two.	2
One example of either an element or a principle.	1
Total	4
Answers that show the elements supporting the principles could include: • elements of design are combined together to develop principles of design • the chosen colour scheme of a design produces harmony/unity • the use of line and shapes produces alignment in a design • the use of positive and negative space has been used to create balance in the design.	

Section Three: Extended answer   **25% (50 Marks)**

Question 27   **(20 marks)**

HoldOn is a Perth-based magazine focusing on lifestyle, travel and events in Western Australia. You have been employed as a consultant by the company that owns HoldOn to assist in the upgrading of its hardware and software. The company wishes to ensure that it has the right tools to update its website and to process and manipulate data.

Hardware, with an effective life of three years, is being sought for multimedia and general workstations. The multimedia workstation requires industry standard desktop publishing, graphics, web and video editing applications. The general workstation requires office-type applications, email and basic photo manipulation applications. In addition, the general workstation is to be a portable technology solution.

Complete the table on the opposite page by recommending the type and size of hardware suitable for each of the work stations. Explain your reasons for selecting the hardware.

(20 marks)

Description		Marks
Multimedia workstation	Lists **five** hardware types and identifies the size.	1–5
	Explains **five** reasons for selecting hardware.	1–5
		10
General workstation	Lists **five** hardware types and identifies the size.	1–5
	Explains **five** reasons for selecting hardware.	1–5
		10
	Total	**20**

Answers could include:

Component	Type/size	Reason
CPU	Multimedia workstation Minimum Core duo with 64 bit support	Some video editing applications now require 64 bit support to operate the latest versions of the software and high GHZ speeds.
	General workstation Minimum 1GHz processor with 32 bit support	Office type applications still run on 32 bit. Less processing power needed.
Primary memory	Multimedia workstation Minimum 4Gb of RAM	Multimedia software requires a lot of RAM to help speed of processing.
	General workstation Minimum 1Gb of RAM	General office type applications do not require a lot of RAM, as processing needs reduced.
Monitor/ display	Multimedia workstation Minimum 19" LCD display	For workers who spend the majority of their day working on screen the larger the screen size the better. The LCD screen type is a better option than CRT due to the faster refresh rate.
	General workstation 13" notebook/laptop with option of external monitor	The laptop/notebook option may need an external monitor to prevent OOS.

Component	Type/size	Reason
Graphics card	Multimedia workstation Dedicated NVIDIA graphics card	Multimedia applications, particular those used for video editing required dedicated graphics card to render effects in real time.
	General workstation Integrated graphics	Office type applications will operate with integrated graphics relying on the RAM of the machine.
Secondary memory	Multimedia workstation 1TB or bigger	Space for storage of large graphic and media files. Larger applications for graphic manipulations/editing.
	General workstation 500Gb or less	Lower requirement for data storage. Smaller files.

Question 28 (25 marks)

(a)   Explain, using examples, the difference between globalisation and outsourcing.

(4 marks)

Description		Marks
Globalisation	Explains globalisation	1
	Provides an example of globalisation	1
Outsourcing	Explains outsourcing	1
	Provides an example of outsourcing	1
	Total	**4**

Answers could include:
Globalisation is increasing the connectivity and mobility of the world's markets and businesses whereby companies do business all over the world where as outsourcing is where a company employs another company to provide a service. The contracted company may be local or it may originate overseas.

(b)   Identify and justify **four** reasons why a large company such as Boar Richards Ltd would choose to outsource its information communication technology services.   (8 marks)

Description	Marks
For each of **four** reasons	
Identifies and justifies why a large company would outsource its information communication technology services.	2
Identifies **or** justifies a reason why a large company would outsource its information communication technology services.	1
Total	8

Answers could include:
- cost savings – the lowering of the overall cost of the service to the business. Access to lower cost economies through off shoring of services through access to cheaper labour
- focus on core business – resources are focused on developing the core business of the company. For example often organizations outsource their IT support to specialised IT service companies
- knowledge and skills– access to intellectual property and wider experience and knowledge of a specialist company
- risk management – services will be provided to a legally binding contract with financial penalties and legal consequences. This is not the case with internal services
- modification of business practices – the trend of standardising business processes, IT Services, and application services which enables companies to buy at the right price, allows businesses access to services which were only available to large corporations
- tax benefit – countries offer tax incentives and have different corporate taxes rates.

(c)   The induction of new staff at Boar Richards Ltd includes training regarding the ethics of employer and employee relationships.

Describe **four** procedures that would be part of a presentation to new employees regarding the ethical use of information communication technology in the workplace. You should provide **four** examples, **one** for each procedure.   (8 marks)

Description	Marks
Describes **four** appropriate procedures which would be part of a presentation to new employees.	1–4
	4
Provides an example for each procedure.	1–4
	4
Total	8

Procedures could include:
- appropriate user policies for employees
- appropriate use of IT in the workplace
- security protocols regarding the use of IT
- legal and contractual obligations for both the employee and the employer.

Examples could include:
- acceptable use policy for employees available in hard copy and on the company intranet
- employee monitoring of email and internet usage
- user credentials and password security
- copyright and privacy.

Any other reasonable answer.

(d)   The company's information communication technology policy governing the use of email
        limits the size of employee electronic mailboxes to 100 Mb. Give **two** explanations why
        employees are limited to mailboxes of this size.   (4 marks)

Description	Marks
For each of **two** explanations	
Explains in detail why employees are limited to a mailbox size.	2
States a fact, limited explanation of why employees are limited to a mailbox size.	1
Total	4
Answers could include: • employee's mailboxes are backed up and backing up data has a cost – both money and time • storing email provides a legal risk to the company, email tends to contain incriminating evidence • email is a target for malware and thus is not the most secure storage location for critical data • company security. • promotes effective management of storage space. Any other reasonable answer.	

(e)   Give **three** explanations why a company would prohibit its employees installing new
        software on its machines.   (6 marks)

Description	Marks
For each of **three** explanations	
States a fact and explains why a company would prohibit employees installing software.	2
States a fact.	1
Total	6
Answers could include: • workstations can be deployed, configured and maintained in a cost effective manner • technical support procedures can be standardized and provided efficiently • company machines cannot have illegal software installed on them thus reducing the company's legal risk. Any other reasonable answer.	

Section Four: Production   **50% (65 Marks)**

Question 29   **(65 Marks)**

(a)   Review the screen captures of the website on pages 18 and 19 and identify **five** design issues. Circle each issue and label it with a number (1–5) in the white space surrounding the screen captures.   (5 marks)

Description	Marks
Five design issues have been identified, circled and numbered.	1–5
Total	5

(b)   Explain the significance of each of the **five** design issues you have identified in part (a).   (10 marks)

Description	Marks
For each of **five** design issues explained	
Explains the significance of the design issue.	2
States a fact about the significance of the design issue.	1
Total	10
Examples of issues: • poor use of space – no or limited negative space • cluttered – lack of balance/harmony • colour and harmony are not connected • lack of a focus point • over use of graphics • some font sizes make wording difficult to read. Any other appropriate design issue.	

(c)   Now that you have reviewed the screen captures from the website, your task is to redesign the homepage for the site. Identify **five** design principles you would use to improve the site. Explain why you have selected each of these principles. List the *List only.* underlying support design element(s) for each principle.   (15 marks)

Description	Marks
Five principles of design have been identified.	1–5
	5
Five principles of design have been explained.	1–5
	5
Lists **five** relevant supporting design elements.	1–5
	5
• Must have correct principle **Total** • Five principles are **dependent** to achieve other marks.	15
Design principles include: • balance—symmetry, asymmetry, radial • rhythm • proportion • dominance • harmony/unity/proximity • repetition • pattern • movement • contrast.	Elements include: • space—positive and negative • alignment/position • line • texture • colour • shape/form • value.

(d)   Redesign a home page for the site.

(i)   Use an appropriate design methodology to manage your ideas (for example, clear sketches, dimensions, annotations, highlighting where the criteria, listed below, are met).   (5 marks)

Description	Marks
Provides a clear, purposeful and appropriate design methodology for the redesign of Yvette's web page.	5
Provides a competent and appropriate design methodology for the redesign of Yvette's web page.	4
Provides a general and appropriate design methodology for the redesign of Yvette's web page.	3
Provides with some clarity an appropriate design methodology for the redesign of Yvette's web page.	2
Provides a limited design methodology for the redesign of Yvette's web page.	1
Total	5

Design methodologies could include:
- sketches
- dimensions
- annotations
- sequencing of work
- checklists
- highlighted criteria
- font sizes.

(ii)   Your design is to include the following items to make it clear how to access information.   (10 marks)

- company name
- contact us
- women's fashion
- men's fashion
- accounts
- guest book
- social network connection
- photo gallery
- language selection
- site plan

Description	Marks
Design includes the ten items.	1–10
Total	10

- company name
- contact us
- women's fashion
- men's attire
- accounts
- guest book
- social network connection
- photo gallery
- language selection
- site plan

(e)   The website displays a range of products. Select one of the products, e.g. women or men's fashion from the website and design an alternative method for promoting the product to customers. You are not limited to designing a website.

(i)   Identify the product you intend to develop and the target audience for it. Discuss **two** design principles and underlying elements that you would use in your design.   (10 marks)

Identifies the product to be developed and the target audience.	2
Identifies the product or the target audience.	1
	2
For each of **two** design principles and underlying elements.	
Discusses coherently and purposefully the design principles and underlying elements to be used in the new design.	4
Discusses logically the design principles and underlying elements to be used in the new design.	3
Describes the design principles and/or underlying elements to be used in the new design.	2
Makes generalised comments about the design principles and/or underlying elements to be used in the new design.	1
	8
Total	**10**

Design principles include:	Elements include:
• balance—symmetry, asymmetry, radial • rhythm • proportion • dominance • harmony/unity/proximity • repetition • pattern • movement • contrast.	• space—positive and negative • alignment/position • line • texture • colour • shape/form • value.

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(ii)   Using the space below, sketch your design and annotate relevant design
        principles and elements.   (10 marks)

Description	Marks
Sketch demonstrates a developed idea demonstrating a unique design.	5
Sketch demonstrates a definite and clear identity of ideas.	4
Sketch demonstrates a simplistic notion of ideas.	3
Sketch is simplistic.	2
Sketch is limited no idea of design.	1
	5
Annotations indicate:	
Comprehensive use of design elements and principles.	5
Effective and use of design elements and principles.	4
Functional and creative use of design elements and principles.	3
Simplistic use of design elements and/or principles.	2
Basic use of design elements and/or principles.	1
	5
Sketch and annotations must reflect description in (e)(i) **Total**	**10**

Answers could include:
*   storybook
*   flyer
*   business card.

Design principles include:	Elements include:
* balance—symmetry, asymmetry, radial * rhythm * proportion * dominance * harmony/unity/proximity * repetition * pattern * movement * ˙ contrast.	* space—positive and negative * alignment/position * line * texture * colour * shape/form * value.