APPLIED INFORMATION TECHNOLOGY

ATAR course examination 2019

Marking key

Marking keys are an explicit statement about what the examining panel expect of candidates when they respond to particular examination items. They help ensure a consistent interpretation of the criteria that guide the awarding of marks.

Section One: Multiple-choice 15% (15 Marks)

Question	Answer
1	c
2	c
3	a
4	b
5	d
6	a
7	a
8	c
9	d
10	d
11	b
12	b
13	c
14	b
15	d

Section Two: Short answer 25% (52 Marks)

Question 16 (9 marks)

(a) List **three** inclusivity features a graphic designer can include in a graphical user interface (GUI) to target an audience of 70-year-olds. (3 marks)

Description	Marks
For each of **three** features (1 mark each)	
Identifies an inclusivity feature	1
Total	**3**
Answers could include: • font control – enlarger • text to speech • audio narration • clear simple navigation • search features	
Accept other relevant answers.	

(b) Describe the features or design choices that demonstrate the compliance of a design with this standard in each of the following areas: (6 marks)

Description	Marks
For each of **three** areas (2 marks each)	
Describes the features or design choices that demonstrate compliance with the given standard	2
Identifies a feature or design choice that complies with the given standard	1
Subtotal	**2**
Total	**6**
Answers could include: Accessibility Properly designed websites can be used by people with disabilities, e.g. features such as text alternatives for images, transcripts or closed captions for audio and video or mentioning any of the WCAG accessibility principles. Cultural awareness can allow reading of text from right to left. Internationalisation The website is designed using universal character set, Unicode or the design is prepared to deal with linguistic and cultural issues, e.g. translation, alternative currency, time zones or calendar systems. Mobile web There can be presentation issues due to limited screen size, input methods suited to small touch screens and bandwidth or device limitations for mobile devices. Websites designed with mobile devices in mind will provide better user experiences to mobile users, i.e. usability features are essential.	
Accept other relevant answers.	

Question 17 (6 marks)

Explain the following features of a Service Level Agreement (SLA), using an example of each to support your response.

Description	Marks
Availability of service	
Explains what availability of service means for a SLA, using an example	3
Makes general comment(s) about availability of service for a SLA	2
Identifies what availability of service is	1
Subtotal	3
Type of services	
Explains what type of services means for a SLA, using an example	3
Makes general comment(s) about type of services for a SLA	2
Identifies what type of services is	1
Subtotal	3
Total	6
Answers could include: Availability of service The service is accessible for specific devices or users for a period of time. This refers to the ability of the user community to obtain a service or good, access the system, whether to submit new work, update or alter existing work, or collect the results of previous work. For example: • an outsourced IT help desk needing to be available for the set hours that are outlined in the contract. Type of services This details what is expected between the parties involved in the agreement, i.e. what services are expected to be carried out by both or one parties. For example: • financial transaction via a bank is an agreement • a company IT help desk service would carry out fixes on work computer stations but not on home laptops.	
Accept other relevant answers.	

Question 18 **(6 marks)**

(a) Describe **two** features a video editing software application should have in order to produce this promotional video. (4 marks)

Description	Marks
For each of **two** features (2 marks each)	
Describes a required feature of video editing software	2
Identifies a feature of video editing software	1
Subtotal	2
Total	4
Answers could include: • the use of effects, such as sounds, to produce an appealing and enticing video for the customers • the use of titles to ensure the name of the business is displayed and remembered by customers so they will want to come into the restaurant • the use of transitions to produce a visually appealing and interesting advertisement • to ensure the software has compression abilities to enable it to load on devices such as smartphones and tablets on social media accounts.	
Accept other relevant answers.	

(b) Explain to the owner **one** benefit of using online tutorials to learn how to use the software needed to produce this promotional video. (2 marks)

Description	Marks
Explains a benefit to the owner	2
Identifies a benefit to the owner	1
Total	2
Answers could include: • easy access (24/7) – can learn the software at any time that is convenient • learn at your own pace – can learn at a speed that is most helpful to the person and can go back and relook if needed • private – can complete in private to ensure quality of understanding • web-based – not limited by hardware or operating system (OS).	
Accept other relevant answers.	

Question 19 (6 marks)

Describe the following project planning tools.

Description	Marks
For each of **three** project planning tools (2 marks each)	
Describes the characteristics of the project planning tool	2
Identifies a characteristic/feature of the project planning tool	1
Total	**6**
Answers could include: Site maps A site map is a list of pages of a website accessible to crawlers or users. It can be either a document in any form used as a planning tool for web design, or a web page that lists the pages on a website, typically organised in hierarchical fashion. This helps visitors and search engine bots find pages on the site. For copyright reasons this text cannot be reproduced in the online version of this document. For copyright reasons this text cannot be reproduced in the online version of this document.	
Accept other relevant answers.	

Question 20 **(6 marks)**

(a)   Define online defamation. (2 marks)

Description	Marks
Defines online defamation	2
Identifies an element of defamation	1
Total	**2**
Answers could include: • online defamation is defined as false and damaging statements that may cause harm to a person's personal or professional reputation. The content could be a post on social media, a blog post, a website, etc.	
Accept other relevant answers.	

(b)   List **four** options available to the politician to counteract online defamation. (4 marks)

Description	Marks
For each of **four** options (1 mark each)	
Identifies an action that can be taken to counteract defamation	1
Total	**4**
Answers could include: • contact the person and ask them to remove/retract the comments • if the defamatory content is online, report and ask the service provider to remove the content • send a legal notice to remove content and correct the record/apologise • initiate legal proceedings to sue for defamation if within one year • seek an out of court settlement.	
Accept other relevant answers.	

Question 21 **(7 marks)**

(a) Identify **three** reasons why governments may want to censor information their citizens can access online. (3 marks)

Description	Marks
For each of **three** reasons (1 mark each)	
Identifies a reason why governments may censor information accessible to their citizens online	1
Total	**3**
Answers could include: • governments may be trying to prevent access to disturbing or damaging content, e.g. content related to terror • governments may be trying to hide content that is damaging to its reputation so its citizens do not find out • governments may be trying to hide judicial rulings to prevent potential future jurors from being compromised • governments may be trying to prevent access to content related to piracy or other crime • governments might want political stability • governments might want to encourage community wellbeing.	
Accept other relevant answers.	

(b) Describe **two** ways that online censorship can negatively affect citizens in a global context. (4 marks)

Description	Marks
For each of **two** ways (2 marks each)	
Describes how online censorship can negatively affect citizens in a global context	2
Makes a general comment about how online censorship can negatively affect citizens in a global context	1
Subtotal	**2**
Total	**4**
Answers could include: • this prevents people from learning the truth from the government that is censoring information • the government may manipulate the websites and information available to people in that country in order to sway the viewpoint in a certain way, i.e. citizens are manipulated • the government may order all Internet providers to shut down, e.g. shutdown access to Twitter, Facebook, etc. This affects citizens by not allowing them to communicate with, and be connected to, the outside world • methods of bypassing the censorship become more prevalent. Citizens might try to access information illegally.	
Accept other relevant answers.	

Question 22 **(8 marks)**

(a) (i) From among the three desktop PCs described above, choose the one most suitable for the graphic design team. (1 mark)

Description	Marks
Identifies PC1 as the most suitable device	1
Total	1

(ii) Explain why this is the most suitable choice. (3 marks)

Description	Marks
Explains why PC1 is the most suitable device for the graphic design team, including a description of the usability of the device for the team	3
Describes why PC1 is the most suitable device without linking to the usability of the device	2
Identifies aspects of PC1 that are suitable for the graphic design team	1
Total	3

Answers could include:
- the CPU of PC1 will be powerful enough to run the programs the graphic designers will require. These products often have high CPU requirements
- the primary memory (RAM) is large enough for the graphic design team to open and run large files often associated with graphic design
- as the files that graphic designers use are often very large, especially when they are being worked on, the storage configuration of PC1 is the most suitable
- graphic designers often require a fast Graphics Card at high resolution so a powerful video card can assist fast and detailed operation.

Accept other relevant answers.

(b) (i) From among the three desktop PCs described on page 12, choose the one most suitable for the office manager. (1 mark)

Description	Marks
Identifies PC2 as the most suitable device	1
Total	1

Question 22(b) (continued)

(ii)   Explain why this is the most suitable choice.   (3 marks)

Description	Marks
Explains why PC2 is the most suitable device for the office manager, including a description of the usability of the device	3
Describes why PC2 is the most suitable device, without linking to the usability of the device	2
Identifies aspects of PC2 that are suitable for the office manager	1
Total	**3**
Answers could include: • the requirements for the office manager are much lower than the graphic design team. A 3.0GHz CPU will more than satisfy the requirements of the software the office manager will run. The memory, storage and video card are all suitable for the tasks the office manager is required to perform • PC3 is too powerful and would be an unnecessary cost for the additional performance and is not required for the office manager to work effectively.	
Accept other relevant answers.	

Question 23   **(4 marks)**

Describe the communication protocols listed below that allow a computer network to share data and resources.

Description	Marks
For each of **two** communication protocols (2 marks each)	
Describes the characteristics of the communication protocol	2
Identifies a characteristic/feature of the communication protocol	1
Subtotal	**2**
Total	**4**
Answers could include: TCP/IP It is a combination of protocols working together. TCP/IP allows large amounts of data to be transmitted as small packets of information (disassembled), which are then reassembled. HTTPS This is a method for securing website traffic. The connection is then encrypted to prevent eavesdropping or monitoring of traffic between the browser and webserver.	
Accept other relevant answers.	

Section Three: Extended answer 20% (30 Marks)

Question 24 (30 marks)

(a) Explain **three** ways in which cloud technology can help ensure that patients have continuity of care and improved interactions with healthcare providers. (9 marks)

Description	Marks
For each of **three** ways (3 marks each)	
Explains a way in which cloud technology can help ensure that patients have continuity of care and improved interactions with healthcare providers	3
Describes a way in which cloud technology can help ensure that patients have continuity of care and improved interactions with healthcare providers	2
Identifies a way in which cloud technology can help ensure that patients have continuity of care and improved interactions with healthcare providers	1
Subtotal	3
Total	9
Answers could include: • patients can see multiple doctors or other professionals who will all be able to see the same data, which can result in better health outcomes for the patients and continuity of care. The medical professionals will be able to collaborate • patients will easily be able to move doctors and the new doctor will be able to see a comprehensive medical history. Patients will not need to ask their current doctor for all their records • records can be lost if they are not carefully stored. Having the medical records in the cloud will mean they are protected from physical loss or damage • in an emergency, paramedics and medical professionals will be able to see health information to help them make informed decisions about patients.	
Accept other relevant answers.	

(b) Some patients have concerns about storing their medical information in the cloud. Referring to the article excerpt, explain why these concerns may be valid. (3 marks)

Description	Marks
Explains a valid concern people might have about their medical information being stored in the cloud	3
Makes general comment(s) about a valid concern people may have about their medical information being stored in the cloud	2
Identifies a concern people may have about their medical information being stored in the cloud	1
Total	3
Answers could include: • people may have concerns about the security of their medical information. With the data being hosted on the cloud, people may be concerned about hackers or other malicious people accessing or modifying their information • if the information is needed to make an important decision and the My Health Record system is unavailable, the medical professionals may not make the most informed choice.	
Accept other relevant answers.	

Question 24 (continued)

(c)   Explain how a digital signature could be used to secure data in this system.   (3 marks)

Description	Marks
Explains how a digital signature could be used to secure data in this system and relates it to the My Health Record system	3
Makes general comments about how a digital signature could be used to secure data in this system	2
Identifies a way a digital signature could be used to secure data	1
Total	**3**
Answers could include: • a digital signature could be used to ensure the data being uploaded to the My Health Record system is coming from a trusted source such as a medical practice, and that the data was not changed or modified during transmission • the digital signature can also prove who sent the data should incorrect data be introduced to the system, allowing the cause of the error to be determined and making the responsible practice or professional accountable.	
Accept other relevant answers.	

(d)   Describe **four** security methods, other than a digital signature, the My Health Record system could implement to secure the stored data.   (8 marks)

Description	Marks
For each of **four** methods (2 marks each)	
Describes a way in which the My Health Record system can ensure the stored patient medical data is secure	2
Identifies a way in which the My Health Record system can ensure the stored patient medical data is secure	1
Subtotal	**2**
Total	**8**
Answers could include: • password – ensuring that only those with authenticated access will be able to view patient's medical data • firewall – restricting access to networked devices where medical data is stored, reducing the possibility of intrusion • anti-virus software – protecting the My Health Record system data from corruption/loss • encryption – protecting the transmission of medical data as it is being uploaded and downloaded from the system • biometrics – the use of human unique features, e.g. eyes, fingerprints, for authentication	
Accept other relevant answers.	

(e)   Explain a legal method *The Guardian* may have used to obtain the internal briefing to
        the Australian Digital Health Agency.   (3 marks)

Description	Marks
Explains the process of using the Freedom of Information Act to obtain information from government departments	3
Makes general comments on using the Freedom of Information Act to obtain information from government departments	2
Identifies the Freedom of Information Act but includes no information about the process	1
Total	3
Answers could include: • The Freedom of Information Act could be used to obtain information from government departments. An application would have been made for the information and a fee would have been paid to process the application. If approved, the information would have been sent to the journalist.	
Accept other relevant answers.	

(f)   Describe **two** benefits the Australian Government may have considered before
        outsourcing.   (4 marks)

Description	Marks
For each of **two** benefits (2 marks each)	
Describes a benefit the Australian Government may have considered while deciding to outsource the development or maintenance of the project	2
Identifies a benefit for the Australian Government	1
Subtotal	2
Total	4
Answers could include: • outsourcing part of the development of the project could have been cheaper for the Australian Government than if they attempted to do the project themselves • it would allow the government to concentrate on their core focus rather than running the project • the third party may have better resources to develop the project in a shorter timeframe and/or to a better-quality final result. The Australian Government may not have the expertise available to complete the system to the standard required.	
Accept other relevant answers.	

Section Four: Scenario **40% (67 Marks)**

Question 25 **(67 marks)**

(a) Describe **two** features that need to be included in the website to enhance its usability.

(4 marks)

Description	Marks
For each of **two** features (2 marks each)	
Describes a usability feature that would need to be incorporated in the design of the website	2
Identifies a usability feature that would need to be incorporated in the design of the website	1
Subtotal	2
Total	4
Answers could include: • clear simple navigation – provides users clear information about the eco-resort • search features – provides users the ability to search quickly for specific content • site map – provides users with a quick view of, and access to, all areas of the website.	
Accept other relevant answers.	

(b) In developing a website for the eco-resort, two different project management approaches are possible. Explain each of these approaches. (6 marks)

Description	Marks
For each of **two** approaches (2 marks each)	
Explains a project management approach	3
Describes a project management approach	2
Identifies a project management approach	1
Subtotal	3
Total	6
Answers could include: Prototype This is used to get early feedback that is related to the project requirements. This is done by providing a working model of the product even before building it. The stakeholders can experiment with it and have a clear idea what the product will be like. Structured Anticipated tasks are provided for the project therefore it requires organisation. A finish date is given – a structured approach gives better control on finishing time.	
Accept other relevant answers.	

(c) Describe **three** features that enable the inclusion of user-generated content in the website. (6 marks)

Description	Marks
For each of **three** features (2 marks each)	
Describes a feature that could be incorporated into their digital solution to facilitate user-generated content	2
Identifies a feature that could be incorporated into their digital solution to facilitate user-generated content	1
Subtotal	2
Total	6
Answers could include: • Twitter feed – users can comment on their own experiences • blogs – ask for users to comment on their experiences • Instagram – encourage customers to share images • RSS feeds – users can comment on their eco-resort experiences • posting on review website, e.g. having the reviews embedded on the eco-resort webpage.	
Accept other relevant answers.	

(d) Design the website homepage for Ceerenity in the space provided on pages 24 and 25. You may use the space below to plan your design.

Your design must include annotations and show:

(i) layout and structure of your intended design (5 marks)

Description	Marks
Layout and structure of the intended design	
Produces an effective drawing/representation of the homepage of the website and detailed, supporting annotations	5
Produces an appropriate drawing/representation of the homepage of the website and some supporting annotations	4
Produces a rudimentary drawing/representation of the homepage of the website and some relating annotations	3
Produces a simplistic drawing of the homepage of the website and limited annotations	2
Produces a limited drawing of the homepage of the website and inadequate or no annotations	1
Total	5

(ii) elements and principles of design used and the relationship between them (3 marks)

Description	Marks
Elements and principles of design used and the relationship between them	
Produces a design that indicates clearly the elements and principles of design used, the relationship between them and that includes supporting annotations	3
Produces a design that features some of the elements and principles of design used, some description of the relationship between them and that includes some relating annotations	2
Produces a design where some of the elements and principles of design have been used but the relationship between them is unclear and the design has inadequate or no annotations	1
Total	3

Question 25(d) (continued)

(iii) organisation of content suitable for the given digital medium (3 marks)

Description	Marks
Organisation of content suitable for the given digital medium	
Produces a design that features logical organisation of content for the given digital medium and supporting annotations	3
Produces a design that shows some organisation of content for the given digital medium and some relating annotations	2
Produces a design that shows limited organisation of content for the given digital medium and inadequate or no annotations	1
Total	**3**

(iv) user-generated content feature(s) suitable for the given digital medium (2 marks)

Description	Marks
User-generated content feature(s) suitable for the given digital medium	
Produces a design that includes effective user-generated content feature(s) for the given digital medium and supporting annotations	2
Produces a design that shows suitable user-generated content feature(s) for the given digital medium but inadequate or no annotations	1
Total	**2**

(v) a help feature that enables accessibility. (2 marks)

Description	Marks
Help feature that demonstrates accessibility features	
Produces a design with a help feature that enables accessibility and that includes supporting annotations	2
Produces a design with a help feature that relates to accessibility but has inadequate or no annotations	1
Total	**2**

(e) Describe **three** tools which could be used to evaluate the effectiveness of your digital solution in accordance with the design brief. (6 marks)

Description	Marks
For each of **three** tools (2 marks each)	
Describes how the tool will be used to evaluate the effectiveness of their digital solution with reference to the design brief	2
Identifies a tool which could be used to evaluate the effectiveness of their digital solution	1
Subtotal	**2**
Total	**6**
Answers could include: • a survey – a sample group to get feedback on the digital solution • client feedback – give sample/prototype to client to get initial feedback • self-reflection – reflect on the design of the product to see if improvements could be made.	
Accept other relevant answers.	

(f)   By referring to Ceerenity:

(i)   describe the concept of user-generated content   (2 marks)

Description	Marks
Describes the concept of user-generated content with reference to Ceerenity	2
Provides a general description of a recognisable type of user-generated content	1
Total	**2**

Answers could include:
*   includes the ability to embed or display filtered content from any popular social media service, e.g. Facebook, Twitter, Instagram, TripAdvisor
*   includes Web 2.0 features that allow Ceerenity's guests to comment on the website
*   guests can interact with the feature.

Accept other relevant answers.

(ii)   describe **two** advantages of user-generated content   (4 marks)

Description	Marks
For each of **two** advantages (2 marks each)	
Describes an advantage of user-generated content with reference to Ceerenity	2
States an advantage of user-generated content	1
Subtotal	**2**
Total	**4**

Answers could include:
*   allows for current up-to-date content to maintain interest in Ceerenity's website and repeat visits
*   allows for engagement with guests
*   allows promotion of Ceerenity across the host social media platforms.

Accept other relevant answers.

(iii)   describe **two** disadvantages of user-generated content.   (4 marks)

Description	Marks
For each of **two** disadvantages (2 marks each)	
Describes a disadvantage of user-generated content with reference to Ceerenity	2
States a disadvantage of user-generated content	1
Subtotal	**2**
Total	**4**

Answers could include:
*   Ceerenity could lose control of the message and brand being promoted
*   the possibility for bullying or bad behaviour in comments or posts, affecting guests
*   inappropriate images could be uploaded by guests
*   extra maintenance time required by site owner to check information uploaded.

Accept other relevant answers.

Question 25 (continued)

(g)   You are required to design the main screen of the application in the space provided on page 29. You may use the space below to plan your response.

Your design must include annotations and show:

(i)   layout and structure of your intended design   (5 marks)

Description	Marks
Layout and structure of design	
Produces an effective drawing/representation of the landing page of the application and detailed, supporting annotations	5
Produces an appropriate drawing/representation of the landing page of the application and some supporting annotations	4
Produces a rudimentary drawing/representation of the landing page of the application and some relating annotations	3
Produces a simplistic drawing of the landing page of the application and limited annotations	2
Produces a limited drawing of the landing page of the application and inadequate or no annotations	1
Total	**5**

(ii)   elements and principles of design used and the relationship between them

(3 marks)

Description	Marks
Elements and principles of design used and the relationship between them	
Produces a design that indicates clearly the elements and principles of design used, the relationship between them and that includes supporting annotations	3
Produces a design that features some of the elements and principles of design used, some description of the relationship between them and that includes some relating annotations	2
Produces a design where some of the elements and principles of design have been used but the relationship between them is unclear and the design has inadequate or no annotations	1
Total	**3**

(iii)   organisation of content suitable for the given digital medium   (3 marks)

Description	Marks
Organisation of content suitable for the given digital medium	
Produces a design that features logical organisation of content for the given digital medium and supporting annotations	3
Produces a design that shows some organisation of content for the given digital medium and some relating annotations	2
Produces a design that shows limited organisation of content for the given digital medium and inadequate or no annotations	1
Total	**3**

(iv) navigation controls suitable for the given digital medium (2 marks)

Description	Marks
Navigation controls suitable for the given digital medium	
Produces a design that shows some navigation controls suitable for the given digital medium and supporting annotations	2
Produces a design that shows limited navigation controls for the given digital medium and inadequate or no annotations	1
Total	2

(v) a help feature that enables accessibility. (2 marks)

Description	Marks
Help feature that enables accessibility	
Produces a design with a help feature that enables accessibility and that includes supporting annotations	2
Produces a design with a help feature that relates to accessibility but has inadequate or no annotations	1
Total	2

Question 25 (continued)

(h)   In designing a LAN, there are many devices Ceerenity will need to consider. Identify **one** device they will need and describe its role in providing WiFi access across the eco-resort.   (3 marks)

Description	Marks
Identifies a device and describes the requirements for the device to specifically suit Ceerenity (or similar business)	3
Identifies a device and describes the general role of the device in a typical network	2
Identifies a required device	1
Total	**3**

Answers could include:
* Wireless Access Point – enables guests to access the Ceerenity LAN using WiFi-enabled devices such as phones or tablets
* Switch – allows distribution of the LAN to all areas of Ceerenity
* Router – allows data to move from the LAN to the WAN for internet traffic to be available
* Firewall – protects Ceerenity from harmful external network traffic
* Modem – allows Ceerenity to access the internet via the phone network.

Accept other relevant answers.

(i)   Ceerenity's WiFi network is to be accessed only by authorised guests. Describe **one** type of network security measure that will ensure authorised access only.   (2 marks)

Description	Marks
Describes a method of access control	2
Identifies a method of access control	1
Total	**2**

Answers could include:
* WiFi network password – this allows Ceerenity to permit only those with the password to connect to the WiFi. They will also have control over distributing the password only to guests and changing the password as needed
* Firewall – protects Ceerenity from harmful external network traffic
* Encryption – protects data transfer.

Accept other relevant answers.

ACKNOWLEDGEMENTS