

**Applied Information Technology**

**UNIT 1**

# **2020**

**MARKING GUIDE**

 Please note that the following notes are guidelines only and are intended

 to provide a common reference for markers. They are in no way to be

 considered as an exhaustive guide or checklist for the marking of this exam.

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

|  |  |
| --- | --- |
| **Question** | **Answer** |
| 1 | A |
| 2 | C |
| 3 | C |
| 4 | B |
| 5 | D |
| 6 | A |
| 7 | A |
| 8 | B |
| 9 | A |
| 10 | C |
| 11 | C |
| 12 | D |
| 13 | D |
| 14 | C |
| 15 | A |

**Section Two: Short Answer 25% (66 Marks)**

**Question 16 (8 marks)**

The Copyright Act 1968 (Australia) is complicated legislation but has three components that are of interest to digital publishers. These are:

* fair dealing
* private use
* moral rights
	1. Below are four situations that may occur in the digital world relating to Copyright in Australia. For each example, state which of the components above apply and give a brief explanation of how this component applies.

(8 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| *You can copy a series of songs from your car radio to listen to them on a long country road trip.* |  |
| Private Use | 1 |
| The music is not being played to an audience or for commercial purposes | 1 |
|  |  |
| *A film critic does not need permission to play a short clip from a film they are reviewing.* |  |
| Fair Dealing | 1 |
| No infringement for review or criticism of works | 1 |
|  |  |
| *A student makes a copy of a chapter of a text book to study it.* |  |
| Fair Dealing | 1 |
| The material is being used for research/study | 1 |
|  |  |
| *The creator of a digital artwork on display in a gallery has their name added to the work.* |  |
| Moral rights | 1 |
| The right of the Artist to be clearly labelled as the creator of the work | 1 |
|  |  |
| **Total** | **8** |

**Question 17 (13 marks)**

The release of the first iPhone in 2007 may be viewed as the beginning of the “Smartphone Revolution”. Thirteen years later, these mobile devices have become embedded in our daily lives.

1. Explain how mobile phones have changed the way we socially interact with others.

(3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Mobile phones have made face to face contact less necessary… | 1 |
| …texting and face time are examples of this… | 1 |
| …social media Apps make the social communities more diverse and greater in number. | 1 |
|  |  |
| **Total** | **3** |

1. These devices have also impacted on how we work. Define the term *Work-life Balance* and describe the impact mobile devices have on work-life balance in today’s society.

(4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Definition: Work-life balance refers to the level of prioritisation between personal and professional activities in an individual’s life… | 1 |
| …and the level to which activities related to their job are present in the home and vice versa. | 1 |
|  |  |
| Impact: Mobile devices allow for the use of business Apps at home and recreational Apps at work which can blur the divisions between work and home… | 1 |
| …potentially upsetting the balance in either environment. | 1 |
|  |  |
| **Total** | **4** |

1. The mobile phone has also changed the nature of the User Interface (UI) presented to users. Choose **three (3)** differences between the UI on a mobile device and that of a conventional desktop. For each choice, describe these differences.

(6 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| One: Mobile screen has less space… | 1 |
| …the UI on the phone must be kept simple with only the essentials on the screen | 1 |
|  |  |
| Two: Less controls… | 1 |
| …mobiles have touch controls – swipe, tap and hold. Desktops have a multitude of keyboard shortcuts and hot keys | 1 |
|  |  |
| Three: Screen orientation… | 1 |
| …mobiles can easily change between landscape and portrait and developers need to account for this resizing. Desktops have this facility but it is not as free-flowing. | 1 |
|  |  |
| *Accept Also: Lower image quality on a mobile as they have less processing power.* |  |
|  |  |
| **Total** | **6** |

**Question 18 (8 marks)**

Use diagrams to assist you in illustrating the similarity and differences between the following compositional rules:

*Grid and Alignment*

*Rule of Thirds*

 (8 marks)



Power points

Grid used to align frames

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Grid and Alignment: Diagram illustrating use of a grid to align objects  | 2 |
| Grid is used to position content of frames on a page….  | 1 |
| …that allows for the elements to be aligned | 1 |
|  |  |
| Rule of thirds: Diagram showing the correct grid pattern and labels key aspects | 2 |
| Page is divided into 9 equal portions and items to be highlighted are positioned on power points… | 1 |
| …or along lines. | 1 |
|  |  |
| **Total** | **8** |

**Question 19 (6 marks)**

During the last decade, there has been an exponential growth in the amount of data collected by both business and the individual.

1. In terms of an individual’s photo collection, explain why organisation of these photos would be important.

(2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Photo organisation places data in the correct category (date/location) and this makes it easy to search… | 1 |
| …by having the photo data in a known location, it is easier to protect (copy/backup). | 1 |
|  |  |
| **Total** | **2** |

1. Spreadsheets are a useful application in assisting any business to manage their data. A well-designed spreadsheet will allow these organisations to use this data effectively.

Explain how both VLOOKUP and HLOOKUP tables can be used to design efficient spreadsheet functionality.

 (4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| A lookup table will look up values in a column or row of a specified table in Excel… | 1 |
| …and will retrieve a value of another corresponding row or column… | 1 |
| …based on either an exact match or approximate match of the retrieved value… | 1 |
| …the VLOOKUP function searches data in columns and HLOOKUP searches rows. | 1 |
|  |  |
| **Total** | **4** |

**Question 20 (8 marks)**

Managing software and updates on a single computer is far less complicated than on a larger network of say 100 devices.

1. Describe how a new install of Microsoft excel desktop edition could be installed on 100 devices with minimal user input.

(2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| The software install files are located on a central server…  | 1 |
| …and commands can be executed that remotely installs Excel on each device without user input. | 1 |
|  |  |
| **Total** | **2** |

1. If there are important updates to the operating system that are required for install, how can the same 100 devices receive these updates without all 100 devices accessing the internet?

(2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| There is an update server that downloads the updates to a local cache…  | 1 |
| …these updates are then distributed on the internal network to all the devices. | 1 |
|  |  |
| **Total** | **2** |

1. Discuss **two (2)** issues that may arise if you attempt to run a very old version of Excel on a new computer system.

(2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| One: The hardware may not be compatible with the software – not enough RAM, CPU, Storage | 1 |
|  |  |
| Two: The Operating System may not be compatible with the older software (16, 32 and 64 bit architecture). | 1 |
|  |  |
| **Total** | **2** |

1. Windows 7 was classified as “End of Life” on January 14, 2020. Explain what is meant by the term “End of Life” with respect to operating systems.

(2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| This means Windows 7 will no longer be supported by the Microsoft Helpdesk… | 1 |
| …there will be no more updates or patches for this OS. | 1 |
|  |  |
| **Total** | **2** |

**Question 21 (8 marks)**

For the following situations, state the file type that would be most suitable and give a valid reason why this file type is more suited to the situation.

(8 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| *A publisher wishes to upload an image suitable for display in an online magazine. The files they have available are* ***image.bmp*** *and* ***image.jpg****.* |  |
| File Type Chosen: image.jpg | 1 |
| Reason: jpg files are compressed and have acceptable quality for online use | 1 |
|  |  |
| *An advertising agency requires a 6m x 4m poster printed for display on a billboard. They have a* ***poster.svg*** *file and a* ***poster.tif*** *file.* |  |
| File Type Chosen: poster.svg | 1 |
| Reason: These files are vector format. This means they do not suffer pixilation when they are made into large images | 1 |
|  |  |
| *A web developer wishes to embed a cartoon animation on a website. They have a* ***cartoon.gif*** *file and a* ***cartoon.cgm*** *file.* |  |
| File Type Chosen: cartoon.gif | 1 |
| Reason: The gif file type can be used to create animations and are a very small file footprint | 1 |
|  |  |
| *A musician wishes to create a soundtrack that can be used across multiple different operating systems: Android, iOS and Windows. They have a* ***music.mp3*** *file and a* ***music.wma*** *file.* |  |
| File Type Chosen: music.mp3 | 1 |
| Reason: This is the most widely used audio file type and is compatible across platforms. .wma is a similar file type but is a Microsoft proprietary format. | 1 |
|  |  |
| **Total** | **8** |

**Question 22 (15 marks)**

* 1. List **four (4)** different types of social networking and give an example for each type.

(8 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| One: Social Connections | 1 |
| Example: Facebook. Allowing users to interact with others to message and share information. | 1 |
|  |  |
| Two: Multimedia Sharing | 1 |
| Example: Instagram allows the sharing of media between users | 1 |
|  |  |
| Three: Professional Networks | 1 |
| Example: Linkedin allows business people to connect | 1 |
|  |  |
| Four: Communities | 1 |
| Example: Online communities for hobbyists – DYI community. | 1 |
|  |  |
| *Accept: Educational, Academic* |  |
| **Total** | **8** |

1. Use three or four sentences to how the popularity of some forms of social networking has led to the prevalence of cyber bullying.

(3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| The ease of access to Social network Apps and, in some cases lack of verification of user ID… | 1 |
| …it is easier to post/upload offensive material anonymously or using a fake ID… | 1 |
| …which allows for bullying on a 24/7 basis. | 1 |
|  |  |
| **Total** | **3** |

1. Discuss **two (2)** strategies that can be employed by individuals to manage or limit their exposure to cyber bullying.

(4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| One: Do not retaliate… | 1 |
| …by removing yourself from the situation, the bully loses power | 1 |
|  |  |
| Two: Reach out for help | 1 |
| …find someone who can listen and assist in stopping the behaviour. | 1 |
|  |  |
| *Accept: Save the evidence, Tell them to stop, Protect your accounts…* |  |
| **Total** | **4** |

**Section Three: Extended Answer 20% (27 Marks)**

**Question 23**

The table below shows a comparison of the technical specifications for the *Xbox One X* and the *PlayStation 4 Pro* gaming consoles.

|  |  |  |
| --- | --- | --- |
| **Specification** | **Xbox One X** | **PlayStation 4 Pro** |
| CPU | eight-core CPU 2.3GHz | eight-core x86-64 AMD "Jaguar" CPU |
| Memory | 12GB of GDDR5 RAM | 8GB of GDDR5 RAM |
| HDD Storage | 1TB HDD | 1TB HDD |
| Graphics | GPU 6 teraflops of graphical computing power, 4k video capable | 4.2 teraflops AMD Radeon-based GPU, 4k video capable |
| Operating System | Windows 10 core | Orbis – based on FreeBSD open source |

Use this information to assist you in answering the following questions.

1. Explain the function of the memory in the operation of each console.

(2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Memory acts as temporary storage… | 1 |
| …of data in use by applications and files. | 1 |
|  |  |
| **Total** | **2** |

1. How does the concept on *non-volatile and volatile* memory relate to the operation of the primary and secondary storage components?

Clearly state the relationship types between primary and secondary storage and volatile/non-volatile memory in your answer.

(4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Volatile memory is computer memory that requires power to maintain the stored information – once the computer is powered down, the information is lost… | 1 |
| …this type of memory is used by primary Storage (RAM) | 1 |
|  |  |
| Non-volatile memory is computer memory that can retain the stored information even when not powered on… | 1 |
| …this type of memory is used by secondary storage (HDD). | 1 |
|  |  |
| **Total** | **4** |

1. List **four (4)** peripherals that can be used with these consoles and classify each as an input, output or both input/output peripheral.

 (4 marks)

|  |  |
| --- | --- |
| **Peripheral** | **Input, output or input/output** |
| Joystick | Input |
| Screen | Output |
| Speakers | Output |
| Microphone | Input |

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Each peripheral is correct and then is correctly identified as input/output or both.  | 4 |
|  | i.e. 1 each |
|  |  |
| **Total** | **4** |

1. The PlayStation 4 Pro uses the Orbis OS which originated from Free BSD, an open source project. The Xbox One X uses a version of the Windows 10 OS.

Both the Orbis OS and Windows 10 are both classified as closed source software.

Using these examples, explain the difference between open and closed source software.

(2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Closed Source: Code is locked and cannot be changed or edited by third parties – i.e. Orbis and Windows 10 | 1 |
| Open Source: Free BSD. Allows third party developers to take the code, alter it and recompile and distribute a new version of the OS. | 1 |
|  |  |
| **Total** | **2** |

1. Using the consoles as examples, explain **four (4)** functions of an operating system.

(8 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| One: Provides a user interface… | 1 |
| …for a user to interact with the OS. Usually graphical. | 1 |
|  |  |
| Two: Managing system resources… | 1 |
| …allocates CPU, memory and network resources to tasks. | 1 |
|  |  |
| Three: Manages security and access rights… | 1 |
| …controls who and what can access the OS and applications. | 1 |
|  |  |
| Four: Running Applications… | 1 |
| …provides the platform (registry) that allows the installation of applications and then manages them. | 1 |
|  |  |
| **Total** | **8** |

1. Using these consoles can sometimes prompt players to become part of *virtual gaming communities*.

Using examples describe **two (2)** different types of virtual communities that can useful for players to become members to enhance their interaction with various games.

(4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| One: Chat facilities within the game itself… | 1 |
| …allows players to chat and interact whilst playing | 1 |
|  |  |
| Two: Social media/Blogs that are dedicated to the game | 1 |
| …players and others can interact, help each other and pass on relevant information to others. | 1 |
|  |  |
| *Accept: YouTube Channels or more specific, legitimate examples.* |  |
| **Total** | **4** |

1. For individuals being part of these online communities, there is a need for gamers to be *“good digital citizens”.*

List **three (3)** components of being a good digital citizen.

(3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| One: Think about how your online activities affect yourself, other people you know, and the wider online communities | 1 |
|  |  |
| Two: Protect your privacy and that of others | 1 |
|  |  |
| Three: Recognise your rights and responsibilities when using digital media. | 1 |
|  |  |
| Accept: Act lawfully and any other reasonable component. |  |
| **Total** | **3** |

**Section Four: Scenario 40% (56 Marks)**

**Question 24 (56 Marks)**

**Find Our Frogs**

In WA, our frogs are in trouble! Dr Jodi Rowley, an Amphibian Researcher at the Australian Museum is concerned by the dwindling numbers of frogs in the South West of Australia.

Forty-two per cent of all frogs and other amphibians are threatened with extinction and, in Australia, we've lost at least four species already.

One of the obstacles to researching frogs is that they are seldom seen but often heard. Their distinctive calls make them easy to identify.

Dr Rowley has developed an App called FrogID that allows users to find out what frogs sound like by playing pre-installed recordings of their calls.

Users can also record frog calls they hear and submit it to the team at the Australian Museum who will listen to the sound and send an email back explaining which frog it was. This information also assists the Museum to track different frog populations.

Your school wishes to encourage their community to become engaged in the program. You, and two other AIT classmates have been asked to create a digital poster that promotes both the FrogID app and the idea of learning more about these threatened animals.

The poster will be embedded in the school newsletter for the next three consecutive monthly editions.

The centrepiece of the poster must show a promotional YouTube Video created by Dr Rowley’s team as well as a description of why this research is necessary.

Links to the relevant App stores and to Social Media need to be included. Contact details for Dr Rowley’s team will also be required.

1. In this project, the school marketing team is your client. After reading the *Find Our Frogs* information, in three or four sentences, summarise the purpose of your project.

 (3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Raise awareness about the environmental challenge of the frog… | 1 |
| …promote the FrogID App… | 1 |
| …encourage the school community to become involved. | 1 |
|  |  |
| *Also accept the use of social media, contacting the researchers.* |  |
| **Total** | **3** |

1. List **three (3)** design criteria that were discussed in the *Find Our Frogs* information.

(3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| One: YouTube video as centrepiece | 1 |
|  |  |
| Two: A description of why research is necessary | 1 |
|  |  |
| Three: App store and Social media links. | 1 |
|  |  |
| *Also: Contact details for Dr Rowley, Embeddable into the newsletter* |  |
| **Total** | **3** |

1. Identify **two (2)** characteristics of the *school community* that would make them members of the target audience for this poster.

(4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Characteristic One: The TA will be environmentally aware … | 1 |
| …and interested in conservation | 1 |
|  |  |
| Characteristic Two: The TA will be tech savvy… | 1 |
| …with experience in social media and using Apps. | 1 |
|  |  |
| *Also: Community minded.* |  |
| **Total** | **4** |

1. The Marketing Department at your school has provided you with a *style guide* to reference when creating the poster. Explain the meaning of the term *style guide* and give **four (4)** components of a well-constructed style guide.

(6 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Explanation: A style guide is a document to reference for expected standards relating to any publication produced by an organisation… | 1 |
| …and includes typography, colour schemes, language etc that is to be used. | 1 |
|  |  |
| Component One: Font type and size (including hierarchy) | 1 |
|  |  |
| Component Two: Logo types and placement on publications | 1 |
|  |  |
| Component Three: Colour schemes to be used in publications | 1 |
|  |  |
| Component Four: Design templates (PowerPoint, documents, letters). | 1 |
|  |  |
| *Accept: Image type, Video, Permission to print images etc.* |  |
| **Total** | **6** |

1. During the design phase of the poster, you and the team use thumbnails and wireframes to develop the final design. Discuss how these two design plan components assist in the poster design process.

(4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Thumbnails: reduced-size versions of pictures or videos… | 1 |
| …used to help in organising them and designing the overall layout of a publication. | 1 |
|  |  |
| Wireframes: A wireframe is a layout of a page that demonstrates what interface elements will exist on key pages… | 1 |
| …wireframes are created for the purpose of arranging elements to best accomplish a particular goal for the design. | 1 |
|  |  |
| **Total** | **4** |

1. You are now required to produce a hand drawn sketch that will show the general layout of the poster. You do not need fine details like actual text or graphics, but rather their positioning on the poster.

On page 34 there is planning space available if required – this will not be marked.

Draw your final sketch on page 35.

*Note: Extra space has been provided on page 42 should it be required.*

For the sketch, you need to include annotations that show the following:

* + 1. How you have incorporated the **three (3)** design criteria from part (b) into your design.

(3 marks)

* + 1. Identify **three (3)** differentelements of design you have considered in the poster and the principles of design to which they relate.

 (6 marks)

* + 1. An explanation of how you will incorporate **two (2)** target audience characteristics from part (c) into your poster.

(4 marks)

* + 1. Evidence that you have considered compositional rules in your layout.

(2 marks)

* + 1. Indicate **three (3)** features of Typography that you have used in the design of the poster.

(3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| (i) Design Criteria are present and match part (b) answer | 3 |
|  |
| (ii) Three elements identified and there is a definite link to their associated principles | 6(2 per link) |
|  |  |
| (iii) Two TA from Part (c) are included  | 2 |
|  …and explained | 2 |
|  |  |
| (iv) Compositional rule(s) identified and relate to design | 2 |
|  |  |
| (v) Typography use identified and justified. | 3 |
|  |  |
| **Total** | **18** |

1. The Marketing Department have requested you make the poster available in print form so that they can be mailed out to families should they request a hard copy. Discuss **two (2) advantages** and **two (2) disadvantages** of using hard copies rather than the online version.

(4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Advantage One: Tactile object. Some people prefer this to put on a noticeboard etc. | 1 |
|  |  |
| Advantage Two: Allows people with limited IT skills or lack of access to devices to be informed. | 1 |
|  |  |
| Disadvantage One: If errors or edits are made, new posters will need to be produced | 1 |
|  |  |
| Disadvantage Two: Interactivity is removed – no video or other links. | 1 |
|  |  |
| **Total** | **4** |

1. The Marketing Department would like to develop a website that includes the many community-based projects they undertake, including FrogID.

List **four (4)** different design considerations you would need to make when designing a website instead of a poster.

(4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| One: More than one page, with a navigation system linking them  | 1 |
|  |  |
| Two: Fluid design to be compatible with different devices | 1 |
|  |  |
| Three: Layout of content would change, more interaction with links | 1 |
|  |  |
| Four: File Types. Using compatible file types for web use. | 1 |
|  |  |
| **Total** | **4** |

* + 1. Both during the design phase and after the poster is completed, you and the project team evaluate the poster. Explain why it is important to evaluate a digital product both during and upon completion of the product.

(2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| During: Make modifications from feedback to improve the product  | 1 |
|  |  |
| After: Gives the project team time to reflect on what went well during the project and what may need to be revised. More about process. | 1 |
|  |  |
| **Total** | **2** |

1. Discuss **four (4)** criteria that could be used to evaluate the design of the poster.

(8 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| One: Matching client requirements... | 1 |
| …have all aspects of the client requirements been included in the design | 1 |
|  |  |
| Two: Functionality… | 1 |
| …does the product do what is was designed to do? | 1 |
|  |  |
| Three: Usability… | 1 |
| …is the poster easy for the user to interact with links, videos etc.? | 1 |
|  |  |
| Four: Messaging | 1 |
| …does the poster deliver the message of conservation and the App program to the community? | 1 |
|  |  |
| *Accept: TA matched, aesthetically pleasing, original design.* |  |
| **Total** | **8** |

End of exam