



Government of **Western Australia**  
School Curriculum and Standards Authority



## ATAR course examination, 2023

### Question/Answer booklet

# APPLIED INFORMATION TECHNOLOGY

Place one of your candidate identification labels in this box.  
Ensure the label is straight and within the lines of this box.

WA student number: In figures

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In words

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### Time allowed for this paper

Reading time before commencing work:

ten minutes

Working time:

three hours

Number of additional  
answer booklets used  
(if applicable):

### Materials required/recommended for this paper

#### *To be provided by the supervisor*

This Question/Answer booklet

Multiple-choice answer sheet

#### *To be provided by the candidate*

Standard items: pens (blue/black preferred), pencils (including coloured), sharpener,  
correction fluid/tape, eraser, ruler, highlighters

Special items: nil

### Important note to candidates

No other items may be taken into the examination room. It is **your** responsibility to ensure that you do not have any unauthorised material. If you have any unauthorised material with you, hand it to the supervisor **before** reading any further.



## Structure of this paper

Section	Number of questions available	Number of questions to be answered	Suggested working time (minutes)	Marks available	Percentage of examination
Section One Multiple-choice	15	15	20	15	15
Section Two Short answer	8	8	40	48	25
Section Three Extended answer	1	1	50	46	20
Section Four Scenario	1	1	70	75	40
<b>Total</b>					100

## Instructions to candidates

1. The rules for the conduct of the Western Australian external examinations are detailed in the *Year 12 Information Handbook 2023: Part II Examinations*. Sitting this examination implies that you agree to abide by these rules.

2. Answer the questions according to the following instructions.

Section One: Answer all questions on the separate Multiple-choice answer sheet provided. For each question, shade the box to indicate your answer. Use only a blue or black pen to shade the boxes. Do not use erasable or gel pens. If you make a mistake, place a cross through that square, then shade your new answer. Do not erase or use correction fluid/tape. Marks will not be deducted for incorrect answers. No marks will be given if more than one answer is completed for any question.

Sections Two, Three and Four: Write your answers to the questions in this Question/Answer booklet preferably using a blue/black pen. Do not use erasable or gel pens.

3. You must be careful to confine your answers to the specific questions asked and to follow any instructions that are specific to a particular question.
4. Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

**See next page**

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

This section has **15** questions. Answer **all** questions on the separate Multiple-choice answer sheet provided. For each question, shade the box to indicate your answer. Use only a blue or black pen to shade the boxes. Do not use erasable or gel pens. If you make a mistake, place a cross through that square, then shade your new answer. Do not erase or use correction fluid/tape. Marks will not be deducted for incorrect answers. No marks will be given if more than one answer is completed for any question.

Suggested working time: 20 minutes.

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1. An author wishes to publish their books online. Suggest the **best** colour profile for the illustrations of the book.
  - (a) CMYK
  - (b) Pantone
  - (c) SVG
  - (d) RGB
  
2. A user should analyse sources of information on a website by checking the accuracy, verifiability and
  - (a) suitability.
  - (b) user experience.
  - (c) currency.
  - (d) inclusivity.
  
3. Which of the following **best** describes an audit trail? It is a
  - (a) log of all the transactions made by a user on a system.
  - (b) record of all the changes made to a document.
  - (c) set of procedures used to recover data after a system failure.
  - (d) technique used to authenticate network users.
  
4. Which of the following project planning tools is used to visually represent the structure of a website or application?
  - (a) Gantt chart
  - (b) online software tool
  - (c) project planning software
  - (d) site map

5. What is the **main** purpose of the Web Design and Applications standard of the world wide web consortium (W3C) standards for internationalisation? To
- (a) ensure that web applications can only be accessed by users from certain countries.
  - (b) enable web applications to support multiple languages and cultures.
  - (c) ensure that web applications are designed with a specific language or culture in mind.
  - (d) create a uniform design for all web applications, regardless of their target audience.
6. Our eyes fall naturally to the top-left corner of a page then move down the page from left to right. Which of the following combination of elements and principles of design matches this statement?
- (a) space → balance
  - (b) line → movement
  - (c) shape → movement
  - (d) line → reading gravity
7. Transmission control protocol (TCP) is responsible for
- (a) sending requests to a web server, which responds with a connection to a web page.
  - (b) routing data over the network, from the sender to the receiver.
  - (c) breaking data into packets and sending them individually to the destination.
  - (d) making secure requests to a web server.
8. Which of the following scans computer files and programs for malicious code and removes or quarantines any detected threats?
- (a) anti-virus software
  - (b) a firewall
  - (c) biometrics
  - (d) passwords
9. The typeface commonly used in print media typography is called
- (a) print.
  - (b) serif.
  - (c) san-serif.
  - (d) paper.
10. Intellectual property (IP) refers to property that
- (a) is inherited and has not been insured.
  - (b) can be touched physically.
  - (c) is tangible and has monetary value.
  - (d) is created by the mind.

11. Which of the following is a benefit of using a structured project management approach?
- (a) project goals and objectives are defined clearly
  - (b) communication and collaboration time is reduced
  - (c) projects can be completed relatively quickly and inexpensively
  - (d) the project's scope can be changed at any point during its life cycle
12. Charlie wants to send Alex an encrypted email. To do this, Charlie takes Alex's public key and encrypts the message. To read a message that is encrypted by a public key, Alex must use
- (a) a decompression algorithm that employs a secure HTTPS connection.
  - (b) the corresponding public key.
  - (c) the corresponding private key.
  - (d) a decryption cipher.
13. Which of the following smartphone features helps to improve usability of the device?
- (a) payment options that allow users to make purchases with their mobile device
  - (b) pre-installed apps that may be used during the life of the device
  - (c) the weight and size of larger smartphones can improve mobile connectivity
  - (d) voice control on the smartphone enables hands-free usage
14. What is the **main** difference between the concept of Web 2.0 and Web 3.0? Web 2.0 is
- (a) a more advanced version of the internet, while Web 3.0 is simply an updated version of Web 2.0.
  - (b) focused on user-generated content, while Web 3.0 emphasises the use of artificial intelligence and machine learning.
  - (c) characterised by static websites and Web 3.0 by dynamic, interactive websites.
  - (d) based on HTML and CSS, while Web 3.0 is centralised technology.
15. Which of the following **best** completes the statement below about the concept of freedom of information (FOI) in Australia?
- It is a legal principle that
- (a) ensures all citizens have unrestricted access to all government documents.
  - (b) allows government agencies to withhold information that is deemed sensitive or confidential.
  - (c) guarantees citizens the right to access information held by government agencies, subject to certain exemptions.
  - (d) only applies to government agencies that allow access to personal information for government purposes.

**End of Section One**

**See next page**

**Section Two: Short answer**

**25% (48 Marks)**

This section has **eight** questions. Answer **all** questions. Write your answers in the spaces provided.

Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 40 minutes.

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**Question 16**

**(4 marks)**

Describe **two** differences between a data mart and a data warehouse.

One: \_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

Two: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**Question 17**

**(6 marks)**

Explain **two** usability features a web designer may include in a graphical user interface (GUI) of an application (app) for a clothing store.

One: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Two: \_\_\_\_\_

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**Question 18**

**(6 marks)**

A small business is seeking to establish a powerful online presence through its website. Explain **two** features of a content management system (CMS) that will enable this.

One: \_\_\_\_\_

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Two: \_\_\_\_\_

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Question 19

(9 marks)

You have been employed to design a website for a new e-commerce store selling sports clothes and accessories.

Explain **three** ways in which you might apply the user interface (UI) elements to enhance the overall user experience (UX).

One: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

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Two: \_\_\_\_\_

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Three: \_\_\_\_\_

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**Question 20**

**(4 marks)**

Online forms use a variety of techniques to validate the data entered by a user. Describe **two** validation techniques that a developer could use to ensure that the data entered is correct.

One: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Two: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Question 21**

**(7 marks)**

(a) Explain a difference between performing backups and archiving data. **(3 marks)**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(b) Compare full and differential backup techniques. **(4 marks)**

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Question 22

(8 marks)

(a) Outline the concept of 'service level agreements'.

(2 marks)

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(b) Explain why the following **two** features are an important part of a service level agreement.

(6 marks)

Availability of service: \_\_\_\_\_

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Type of service: \_\_\_\_\_

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**Question 23**

**(4 marks)**

Explain how typography can be used effectively in publishing a print advertisement, including an example.

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**End of Section Two**

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**Section Three: Extended answer**

**20% (46 Marks)**

This section contains **one** question. Write your answers in the spaces provided.

Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 50 minutes.

**Question 24**

**(46 marks)**

You have been employed to set up a secure network for a new local travel agency. The travel agency is a franchise of 'Explore Expeditions' and is owned and run by the manager. The head office of Explore Expeditions will provide the new owner with brand and marketing material, but the day-to-day running of the travel agency will be the responsibility of the owner/manager.

The agency will have six travel agents, a receptionist and the owner/manager in store, and will have two travel agents working remotely.

The agency has the following requirements for staff:

<b>Staff member/s</b>	<b>Location</b>	<b>Requirement</b>
Six travel agents	Office	Desktop with wired access to network
Receptionist	Office	Desktop with wired access to network
Manager	Office (manager's office)	Laptop with a choice of wired or wireless access to network
All staff	Office	<ul style="list-style-type: none"> <li>• Smartphone access to network</li> <li>• Shared multi-function printer with wired access to network</li> <li>• Shared internet access for all devices and desktops</li> </ul>
Two travel agents	Remote	<ul style="list-style-type: none"> <li>• Laptop</li> <li>• Remote access to network and cloud services through internet connections</li> </ul>

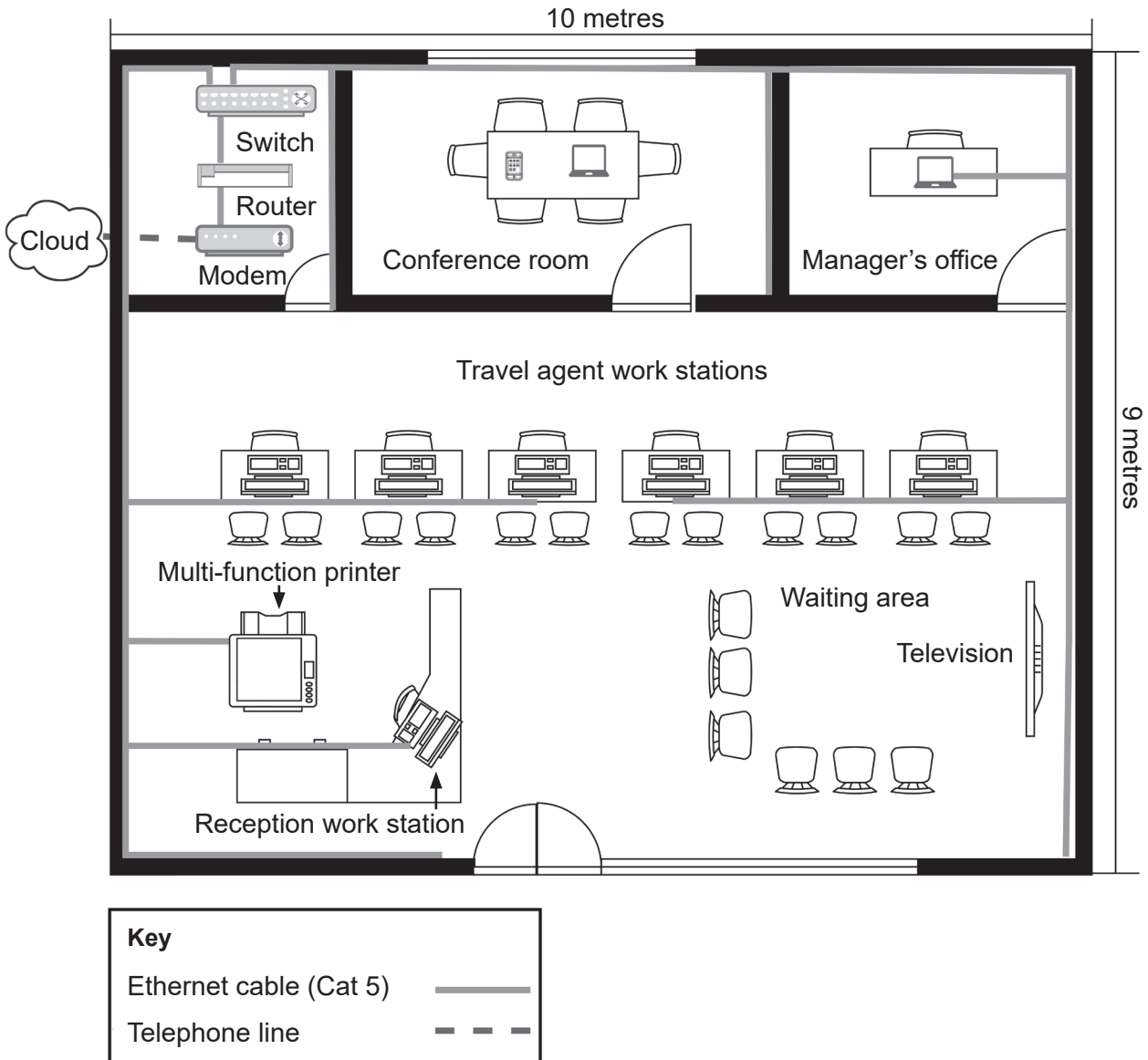
There is a conference room in the office that will be used for various meetings and will require wireless access to the network for staff and guests.

The travel agents access the internet on their desktops or mobile devices to search for travel, accommodation and excursions. When the customers provide their travel preferences, the travel agents will check for availability on the required dates, using a login for each of the travel vendors to make bookings for the client. The travel agents will also use business applications, such as word processing and email applications, to produce itineraries and send confirmation of bookings.

The travel agency will utilise cloud-based storage for all its files. Additionally, this information will be stored in a data warehouse, which can be accessed by the head office. Head office will provide the manager of the agency with data reports regarding sales of travel packages and choices for travel, accommodation and excursions.

**See next page**

The initial plan for the network is as follows:



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- (b) Referring to the scenario, identify and describe **two** other security measures the travel agency could use to protect its network. (6 marks)

One: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Two: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
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All travel vendors have requested that a digital signature be used when sending private information in a digital document.

- (c) With reference to the scenario, discuss how a digital signature works to ensure the integrity of a document. (4 marks)

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**Question 24** (continued)

As the travel agency conducts most of their business on the web, they will be using HTTP and HTTPS protocols.

- (d) Using **two** examples from the scenario, one for each protocol, justify the use of the HTTP and HTTPS protocols in the travel agency. (6 marks)

One: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Two: \_\_\_\_\_

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- (e) With reference to the scenario, discuss the difference between the 802.3 and 802.11x communication standards. (4 marks)

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- (f) The manager would like to know why they are using cloud-based storage instead of a server. With reference to the scenario, outline **two** advantages and **two** disadvantages for the travel agency of using a cloud-based storage system over a local server. (8 marks)

Advantages

One: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Two: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Disadvantages

One: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Two: \_\_\_\_\_  
\_\_\_\_\_  
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Section Four: Scenario

40% (75 Marks)

This section contains **one** question. Write your answers in the spaces provided.

Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 70 minutes.

Question 25

(75 marks)

Young entrepreneurs, Charlie and Alex, have realised a need for an application (app) that catalogues specials on food at different restaurants and highlights other food-related content and services. They are in the early planning stages of developing such an app and have called it 'Feasty Foods'. They have created a draft storyboard for a promotional video and a design for a website.

Charlie and Alex would like to employ your services to:

- develop the app
- offer advice on the development of a promotional video
- give feedback on the website design.

(a) You have advised Charlie and Alex that you will be employing the prototype approach to developing the app. Suggest **two** reasons why the prototype approach, rather than the structured approach, is the preferred method. (6 marks)

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**Question 25** (continued)

Charlie and Alex would like to communicate with you using various online software tools.

- (b) Outline **three** online software tools that you recommend for communicating and sharing resources, designs and plans. (3 marks)

One: \_\_\_\_\_

\_\_\_\_\_

Two: \_\_\_\_\_

\_\_\_\_\_

Three: \_\_\_\_\_

\_\_\_\_\_

Charlie and Alex have requested clarification on the world wide web consortium (W3C) and its standards.

- (c) (i) Describe a purpose of W3C. (2 marks)

\_\_\_\_\_

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\_\_\_\_\_

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- (ii) In relation to the website and the development of the app, explain the purpose of the Web Design and Applications standard from the W3C standards for: (12 marks)

HTML: \_\_\_\_\_

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CSS: \_\_\_\_\_

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Mobile web: \_\_\_\_\_

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Graphics: \_\_\_\_\_

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Question 25 (continued)

(d) Below is a draft storyboard that Charlie and Alex have created for a promotional video for Feasty Foods. It starts with the proposed logo:

<p><b>Shot 1</b></p> 	<p><b>Shot 2</b></p> 
<ul style="list-style-type: none"> <li>• Introduction music</li> <li>• Transition</li> </ul>	<ul style="list-style-type: none"> <li>• Voice over: "I'm hungry. How can I find specials on food now?"</li> <li>• Sound effect</li> </ul>
<p><b>Shot 3</b></p> 	<p><b>Shot 4</b></p> 
<ul style="list-style-type: none"> <li>• Voice over: "Good thing there is the Feasty Foods App."</li> </ul>	<ul style="list-style-type: none"> <li>• Voice over: "Free to download! Cheap, fast and convenient food."</li> </ul>
<p><b>Shot 5</b></p> 	
<ul style="list-style-type: none"> <li>• Outro music</li> <li>• Voice over: "Feasty Foods, your go-to for food. Download now and start feasting."</li> <li>• Transition</li> </ul>	

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- (i) With reference to Charlie and Alex’s storyboard, explain how **three** video and/or sound application features could be used to create an engaging promotional video. (9 marks)

One: \_\_\_\_\_

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Two: \_\_\_\_\_

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Three: \_\_\_\_\_

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Question 25 (continued)

- (ii) Identify **two** accessibility features that have been considered for the promotional video and explain how each one improves accessibility for users with different needs. (8 marks)

One: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

Two: \_\_\_\_\_

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- (e) Describe how the following publishing features could be incorporated into your app design. (6 marks)

Colour schemes: \_\_\_\_\_

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Typography: \_\_\_\_\_

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Templates: \_\_\_\_\_

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Question 25 (continued)

(f) Below is the website design that Charlie and Alex have created for Feasty Foods.

**Feasty Foods** Menu Rewards Catering Location Login | Join now

# Hungry? Have a feast!

**Order Now**

## Amazing Offers!

**Join Feasty Foods rewards and claim your free yoghurt!**

**Order now with our new App**

- Order delivery
- Earn rewards
- Store discounts
- View order history

and more!

**Pay your way**

Stay in the Loop

Email  Sign Up

This form is protected by reCAPTCHA and the Google [Privacy Policy](#) and [Terms of Service](#) apply.

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**Question 25** (continued)

- (g) Using the information in the storyboard on page 22 and website on page 26, design an app landing page for Charlie and Alex in the space provided on page 29.

Your design must include annotations and show:

- (i) the layout and structure of your intended design (5 marks)
- (ii) the elements and principles of design used and a critical analysis of the relationship between them (5 marks)
- (iii) the organisation of content suitable for the given digital medium (3 marks)
- (iv) user-generated content feature(s), suitable for the target audience (2 marks)
- (v) a feature that considers usability. (2 marks)

Anything written on this page will **not** be marked.

PLANNING ONLY

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Use the surrounding area for annotations.



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**End of questions**







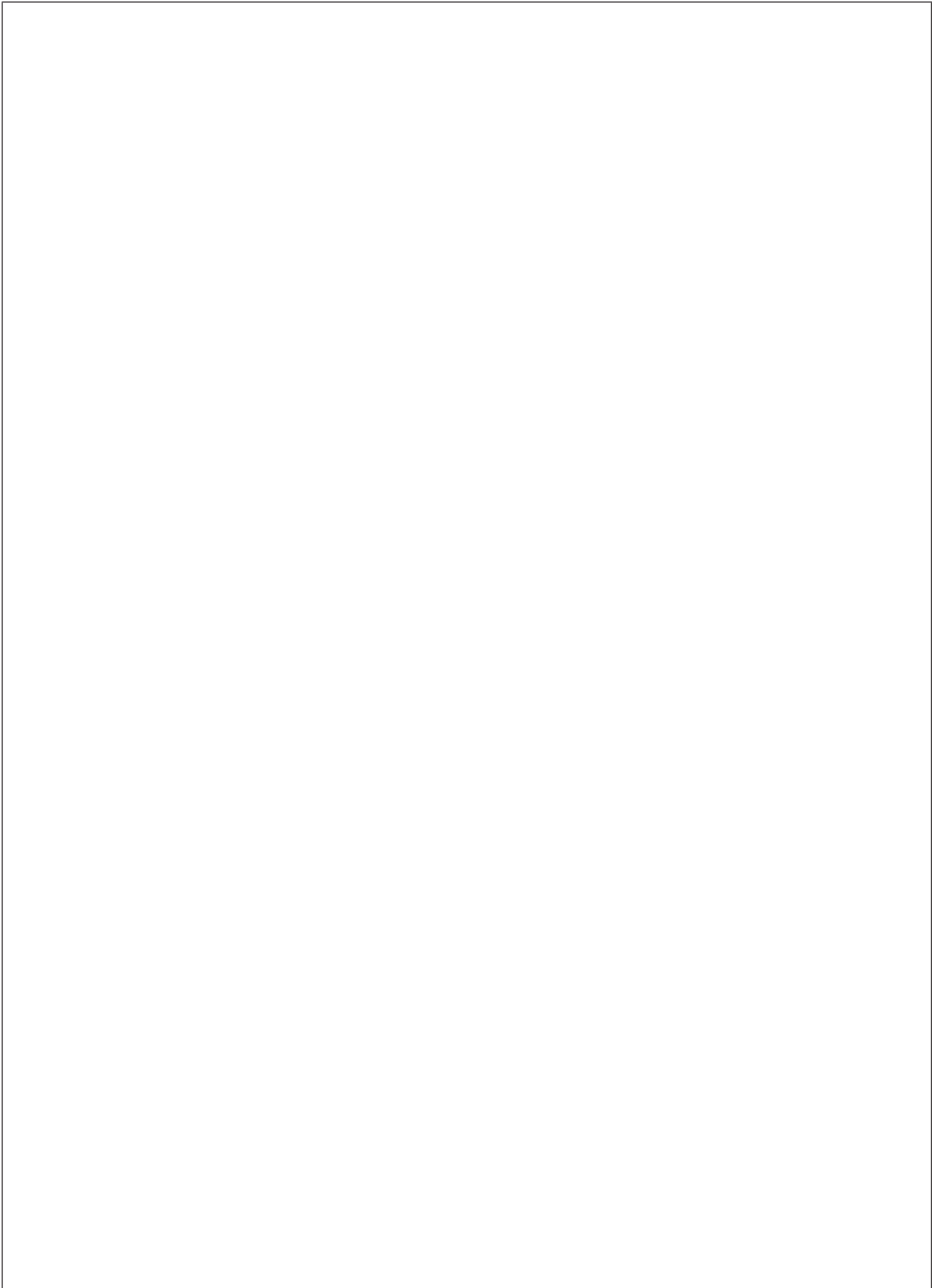






Supplementary page

Question number: \_\_\_\_\_



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## ACKNOWLEDGEMENTS

### Question 15

[...] from: Office of the Australian Information Commissioner. (n.d).  
*What is Freedom of Information?* Retrieved May, 2023, from  
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