



ATAR course examination, 2024

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

--	--	--	--	--	--	--	--	--

In words

Time allowed for this paper

Reading time before commencing work:
Working time:

ten minutes
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	55	25
Section Three Extended answer	1	1	50	48	20
Section Four Scenario	1	1	70	79	40
Total					100

Instructions to candidates

- The rules for the conduct of the Western Australian external examinations are detailed in the *Year 12 Information Handbook 2024: Part II Examinations*. Sitting this examination implies that you agree to abide by these rules.

- 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.

- 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.
- 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.


1. The network component responsible for forwarding network packets within a local area network (LAN) is a
 - (a) modem.
 - (b) server.
 - (c) firewall.
 - (d) switch.

2. Which of the following protocols addresses and routes packets of data from source to destination?
 - (a) TCP/IP
 - (b) FTP
 - (c) 802.3
 - (d) HTTP

3. How does a digital signature contribute to the integrity of a document? It
 - (a) encrypts the entire document.
 - (b) decrypts any changes made to the document.
 - (c) compresses the document for efficient storage.
 - (d) ensures the document has not been altered.

4. Which of the following statements is justification for placing a firewall between the modem and the router in a local area network (LAN)? A firewall
 - (a) between the modem and router increases the speed of the data flowing in from the wider area network (WAN).
 - (b) is necessary to convert the analogue signals from the modem to the digital signals of the router.
 - (c) helps to protect the network by monitoring and controlling packets in and out of the LAN.
 - (d) cannot go after the router as it could interfere with wireless communications within the LAN.

5. In the context of information control, what term is commonly used to describe the removal or restriction of content that is considered inappropriate, sensitive or objectionable?
- (a) accessibility
 - (b) censorship
 - (c) encryption
 - (d) access permissions
6. Which of the following would **not** be found in a code of conduct? Employee
- (a) use of work emails and internet.
 - (b) day-to-day operational tasks.
 - (c) work hours including overtime.
 - (d) rights and expectations.
7. The *Freedom of Information Act 1982* (Australia) provides a legally-enforceable right to
- (a) protect the privacy of individuals and organisations from government intrusion.
 - (b) regulate the collection, use and disclosure of personal information by government agencies.
 - (c) access information held by the government with some exemptions.
 - (d) promote transparency and accountability in the administration of government functions.
8. Which of the following tools is widely used in project management to represent the sequence of tasks, milestones and their dependencies?
- (a) storyboards
 - (b) site maps
 - (c) flow charts
 - (d) Gantt charts
9. What is the **main** purpose of a disaster recovery plan (DRP)? To
- (a) document the steps needed to restore normal business operations after a disaster.
 - (b) identify the potential risks and threats to an organisation's IT infrastructure.
 - (c) allocate resources and budget for disaster prevention and mitigation.
 - (d) evaluate the performance and effectiveness of the recovery processes.
10. In the context of authentication, what does a digital certificate confirm? The
- (a) originator's private key.
 - (b) authentication of a public key.
 - (c) identity of the certificate authority.
 - (d) strength of the encryption algorithms used.

11. Rideshare and delivery drivers rely on mobile devices for their occupation. Which of the following sets of features is **most** important for the usability of these devices in these occupations?
- (a) high-resolution camera, GPS capability, large storage capacity
 - (b) reliable battery life, cellular network capability, GPS capability
 - (c) biometric security, processor speed, large screen size
 - (d) processor speed, virtual reality (VR) compatibility, voice-control capabilities
12. The image below uses which design element
- 
- (a) shape, to create the design principle emphasis
(b) space, to create the design principle alignment
(c) repetition, to create the design principle pattern
(d) size, to create the design principle movement
13. A data analyst is tasked with enhancing security measures for sensitive information. Which of the following types of data generally requires increased protection because of sensitivity?
- (a) customer loyalty program preferences
 - (b) marketing strategies for upcoming products
 - (c) survey data on customers favourite products
 - (d) health records of employees
14. Which of the following publishing features uses containers to place content on a web page?
- (a) columns
 - (b) layers
 - (c) frames
 - (d) navigation
15. Which of the following measures is widely used to enhance the security of data processing?
- (a) encryption
 - (b) backup
 - (c) compression
 - (d) archiving

End of Section One

See next page

Section Two: Short answer

25% (55 Marks)

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

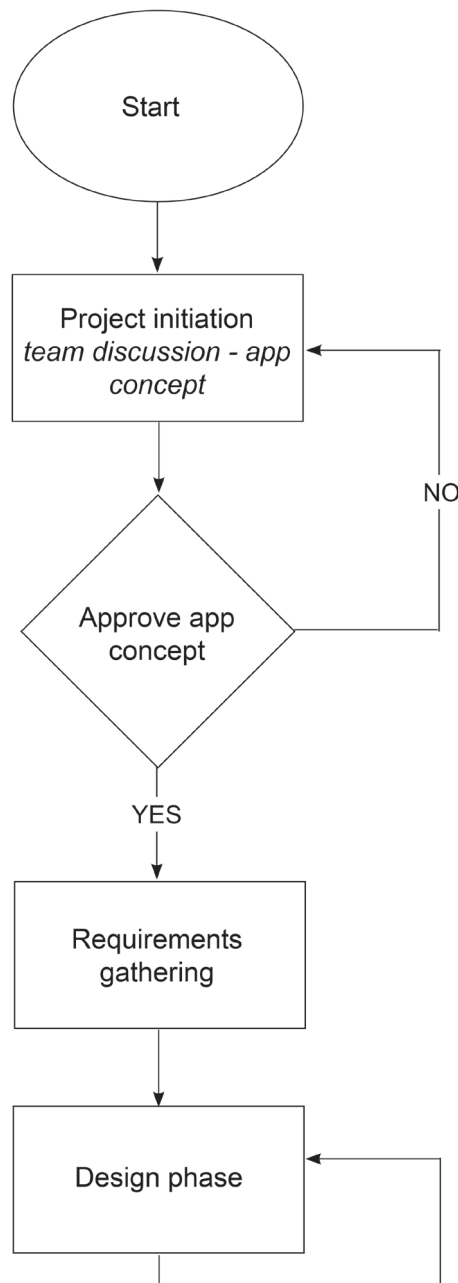
Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 40 minutes.

Question 16

(4 marks)

The incomplete diagram below was prepared for a team of developers creating an application (app) for a transport system.



See next page

- (a) Identify the project planning tool represented in the diagram. (1 mark)

- (b) Explain how this tool could be used to help the developers create a digital solution. (3 marks)

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Question 17

(8 marks)

A new business is trying to establish an online presence. Describe **two** advantages and **two** disadvantages of incorporating user-generated content into a digital marketing strategy.

Advantages

One: _____

Two: _____

Disadvantages

One: _____

Two: _____

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Question 18

(8 marks)

A school is upgrading its network. For each of the following areas of the campus, discuss which standard, 802.3 (ethernet) or 802.11x (wireless), is more suitable.

Computer media labs with 30 desktops: _____

Outdoor study areas: _____

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Question 19

(6 marks)

Describe how you would assess the verifiability, accuracy and currency of an online journal.

Verifiability: _____

Accuracy: _____

Currency: _____

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

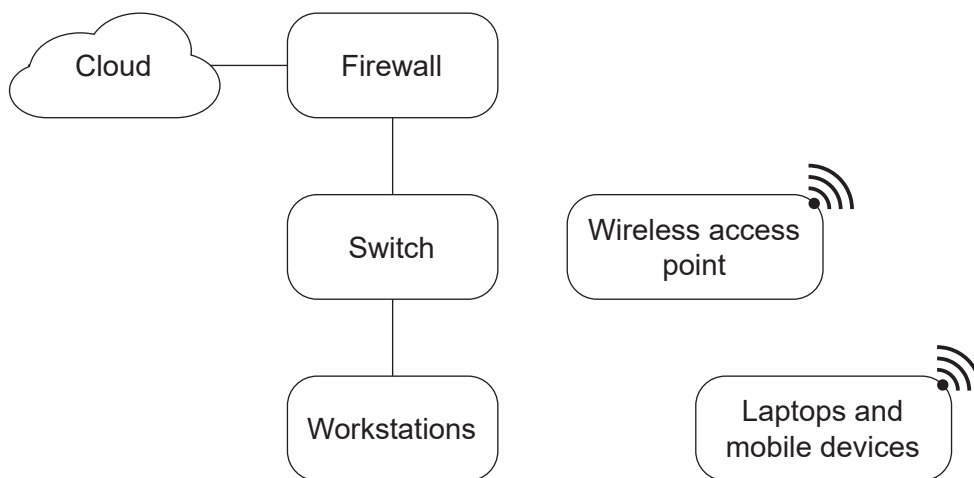
This page has been left blank intentionally

See next page

Question 20

(8 marks)

An intern has provided you with the network diagram below for a local area network (LAN) connected to the internet.



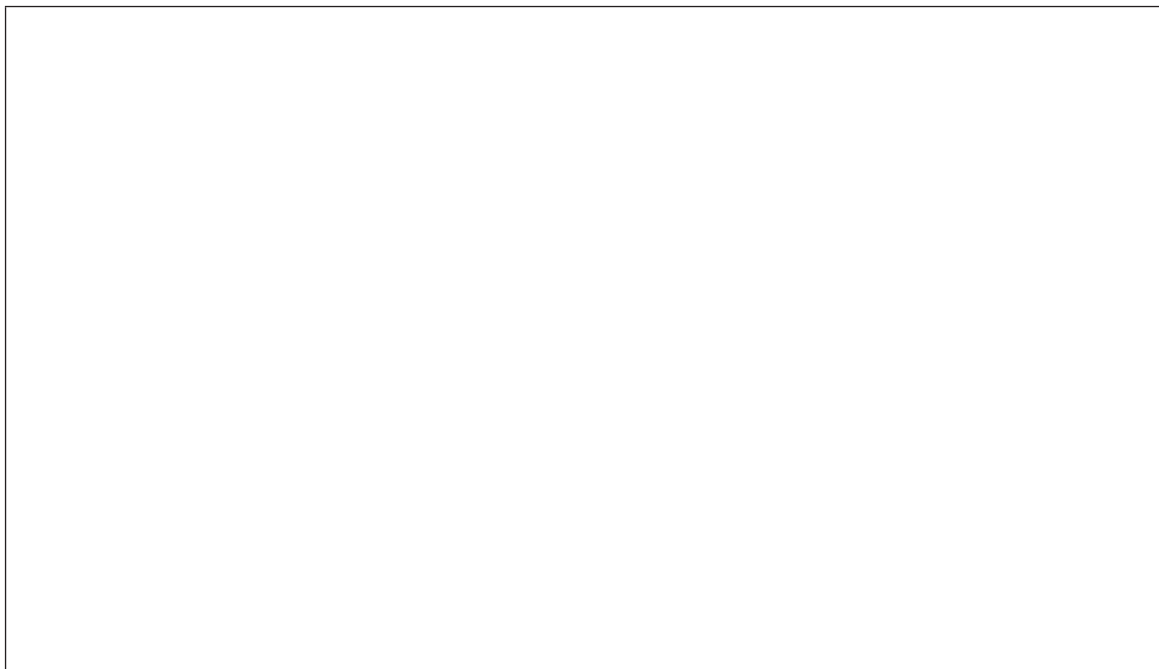
Refer to the network diagram to answer the following questions:

- (a) Explain **two** errors in the network diagram that will affect the overall functionality of the network. (6 marks)

One: _____

Two: _____

- (b) In the space below, draw a diagram of a network that would ensure the LAN's efficient functionality. (2 marks)



DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Question 21

(10 marks)

A medium-sized enterprise intends to enhance its data backup strategy by implementing a weekly full backup regimen, supplemented with daily backups. The options for the daily backup are incremental or differential.

- (a) Describe 'incremental' and 'differential' backup. (4 marks)

Incremental backup: _____

Differential backup: _____

- (b) Contrast the effects of incremental and differential backup techniques on the following. (6 marks)

Network and storage resources: _____

Recovery of data: _____

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Question 22

(8 marks)

A software company wants to place its user manuals online for users to access.

Describe **one** advantage and **one** disadvantage for **two** different formats of digital publication.

Format one: _____

Advantage: _____

Disadvantage: _____

Format two: _____

Advantage: _____

Disadvantage: _____

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Question 23

(3 marks)

Explain how a site map contributes to the overall functionality and user experience of a website.

End of Section Two

See next page

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Section Three: Extended answer**20% (48 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**(48 marks)****Smart city**

A local council is dedicated to enhancing its connection with residents and visitors by transforming their main business and shopping districts into a 'smart city.' Utilising mobile devices and emerging technologies, the council aims to boost engagement, improve public services and enrich cultural awareness. It plans to develop a free application (app) that will offer real-time information on events, attractions, transportation and dining, all available in multiple languages.

The app will use the phone's global positioning system (GPS) and camera features to deliver augmented reality (AR) experiences, bringing historical events to life as tourists explore landmarks and heritage trails. It will also display virtual art in botanical gardens. For children, AR will add an element of magic by introducing fictional characters into real-world settings, such as mermaids on beaches, superheroes on buildings and animals on walking paths. Additionally, virtual reality (VR) will provide 360° views and immersive experiences of tourist spots, making them accessible to everyone, including individuals with disabilities. These VR experiences will be available via VR headsets at various tourist locations and on mobile devices through the app, helping both residents and visitors plan their holiday itineraries.

Local artists will contribute digital art for AR and VR experiences and app users will be able to access relevant information via links to the artists' websites. The app will allow social sharing, venue ratings, user reviews and photo uploads, encouraging more visitors and helping the council to understand visitor preferences.

The council will use data from the app, sensors and social media to improve planning, manage resources and identify future trends. Sensors will track traffic flow and activity times to optimise public transport and facilities. Data will be stored onsite, while cloud storage will handle movement data and social media will be used as a source of feedback.

Question 24 (continued)

- (a) With reference to the scenario on page 17, assess **one** impact of convergence trends in digital technologies for international visitors to the city. (4 marks)

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Question 24 (continued)

- (g) Explain how you could use **three** tools to evaluate the effectiveness of the app to ensure it delivers the experience outlined in the scenario on page 17. (9 marks)

One: _____

Two: _____

Three: _____

End of Section Three

See next page

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

This page has been left blank intentionally

See next page

Section Four: Scenario

40% (79 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

(79 marks)

The Harmony Horizon Festival is a vibrant and inclusive celebration held annually in Perth, Western Australia. This three-day extravaganza is designed to bring together teenagers of different gender, backgrounds and interests, fostering a sense of unity and connection in a fun and creative atmosphere.

The festival grounds are transformed into a kaleidoscope of colour. Large, geometric shapes inspired by Western Australian landscapes create a visually stunning and immersive environment. The main stage features a futuristic design with interactive light emitting diode (LED) panels that respond to the beats of the music, creating a dynamic and engaging backdrop for performances.

The Harmony Horizon Festival offers a range of activities tailored to individual interests. An extreme sports zone features skateboarding ramps and a BMX track. For those with a creative flair, craft stations allow attendees to express themselves through art, fashion and design, as well as a diverse musical line-up with local talent and internationally-acclaimed acts.

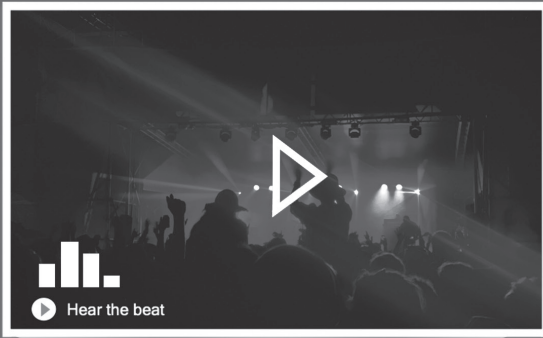
The events manager has created a draft website. The purpose of the website is to engage interest, provide event information and allow for tickets to be purchased. The website has a video with a sample of the line-up of the artists who will be performing at the festival.

The events manager would like to boost sales by creating a website banner and digital billboard as additional advertising and is seeking your input.

During the festival, attendees will be able to download a dedicated festival app that will provide real-time schedules, maps and a social platform for attendees to connect and share their experiences.

The Harmony Horizon Festival has provided a draft design of the website on page 25.

See next page



Futuristic Beats

Featuring a futuristic design with interactive LED panels that respond to the beats of the music, creating a dynamic and engaging backdrop for performances.

Listen and interact with the music, creating your own custom designs, showcased for all to enjoy. Join in on the various activities, with extreme sports, craft stations and augmented displays. View the app for more information.

Events

See what's coming soon and find the perfect experience.



14 DEC - 16 DEC

1:00 PM

Extreme Sports

Get tickets



14 DEC - 16 DEC

1:00 PM

DIY Craft Stations

Get tickets



14 DEC - 16 DEC

1:00 PM

Music

Get tickets

Download App

The Harmony Horizon Festival app provides real-time information.



Augmented Reality

Be part of the music, interact with the beats.

Be Informed

Keep up-to-date with schedules, maps and share your experiences.

Select language Accessibility

Leave a review for your chance to win  

Stay in the loop

Email

Sign Up

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

© 2024

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

- (c) Explain **two** ways in which the website design on page 25 uses sound and/or video strategically to enhance the user experience. (6 marks)

One: _____

Two: _____

- (d) Explain **one** feature within the website design on page 25 that promotes inclusivity. (3 marks)

- (e) Explain **one** feature within the website design on page 25 that promotes usability. (3 marks)

See next page

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Question 25 (continued)

- (f) Explain **one** user-generated content feature within the website design on page 25 that would enable the target audience to interact with the festival. (3 marks)

- (g) Using the information in the scenario on page 24 and website design on page 25, design a captivating website banner in the space provided on page 30. The purpose of the website banner design is to encourage the target audience to purchase tickets and it must include the following information:


- date of festival (14 to 16 December 2024)
- link for ticket sales
- event schedule.

Your website banner design must include annotations and show the:


- (i) layout and structure of your design (5 marks)
- (ii) elements and principles of design used and the relationship between them (3 marks)
- (iii) typography used. (3 marks)

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

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF




Harmony Horizon
Festival

Home About us Profile Events Blog 

The white space is where the banner will be positioned on the website.

PLANNING ONLY




Futuristic Beats

Featuring a futuristic design with interactive LED panels that respond to the beats of the music, creating a dynamic and engaging backdrop for performances.

Listen and interact with the music, creating your own custom designs, showcased for all to enjoy. Join in on the various activities, with extreme sports, craft stations and augmented displays. View the app for more information.

Events


See what's coming soon and find the perfect experience.



14 DEC - 16 DEC
1:00 PM

Extreme Sports


Get tickets



14 DEC - 16 DEC
1:00 PM

DIY Craft Stations

Get tickets



14 DEC - 16 DEC
1:00 PM

Music

Get tickets

Download App

The Harmony Horizon Festival app provides real-time information.



Augmented Reality

Be part of the music, interact with the beats.

Be Informed

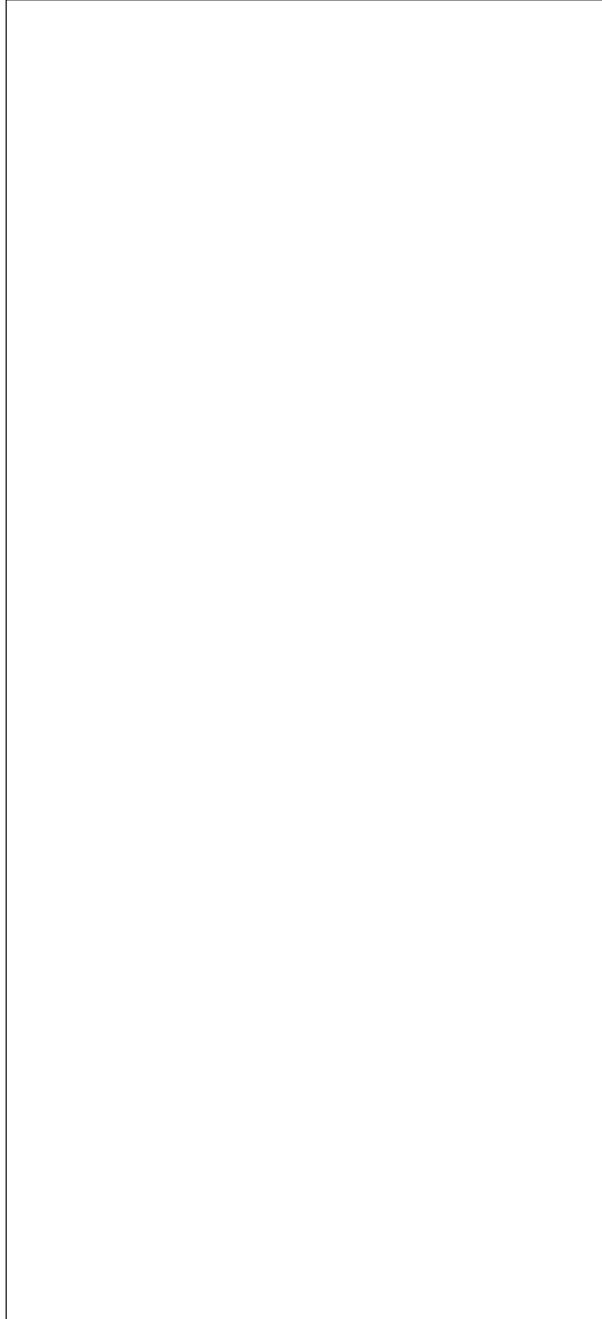
Keep up-to-date with schedules, maps and share your experiences.

[Select language](#)
[Accessibility](#)

Leave a review for your chance to win  

Question 25 (continued)

Use the surrounding area for annotations for the banner design.



See next page

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

- (h) The digital billboard is a popular advertising format. The organisers of the Harmony Horizon Festival would like you to produce a high-resolution, attention-grabbing digital billboard to showcase the Festival. Your billboard design should include **two** static frames with no animation or motion, and should consider the use of typography. Each frame will alternate at 10 second intervals.
- (i) Create a storyboard with **two** frames in the spaces provided on pages 32 and 33 and annotate the layout and structure of the two frames. (10 marks)

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

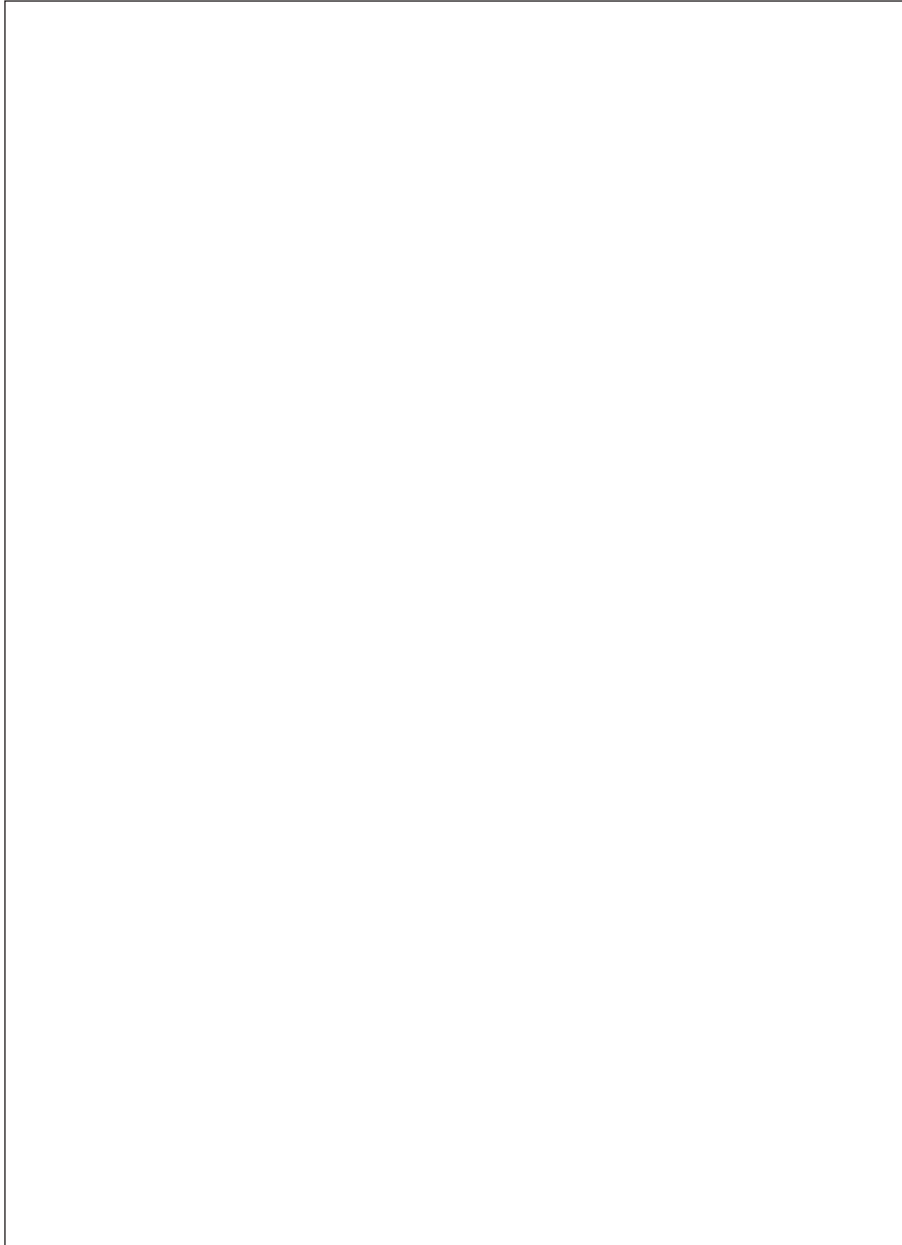
PLANNING ONLY

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

See next page

Question 25 (continued)

Design **frame one** for the digital billboard storyboard in the space provided below.

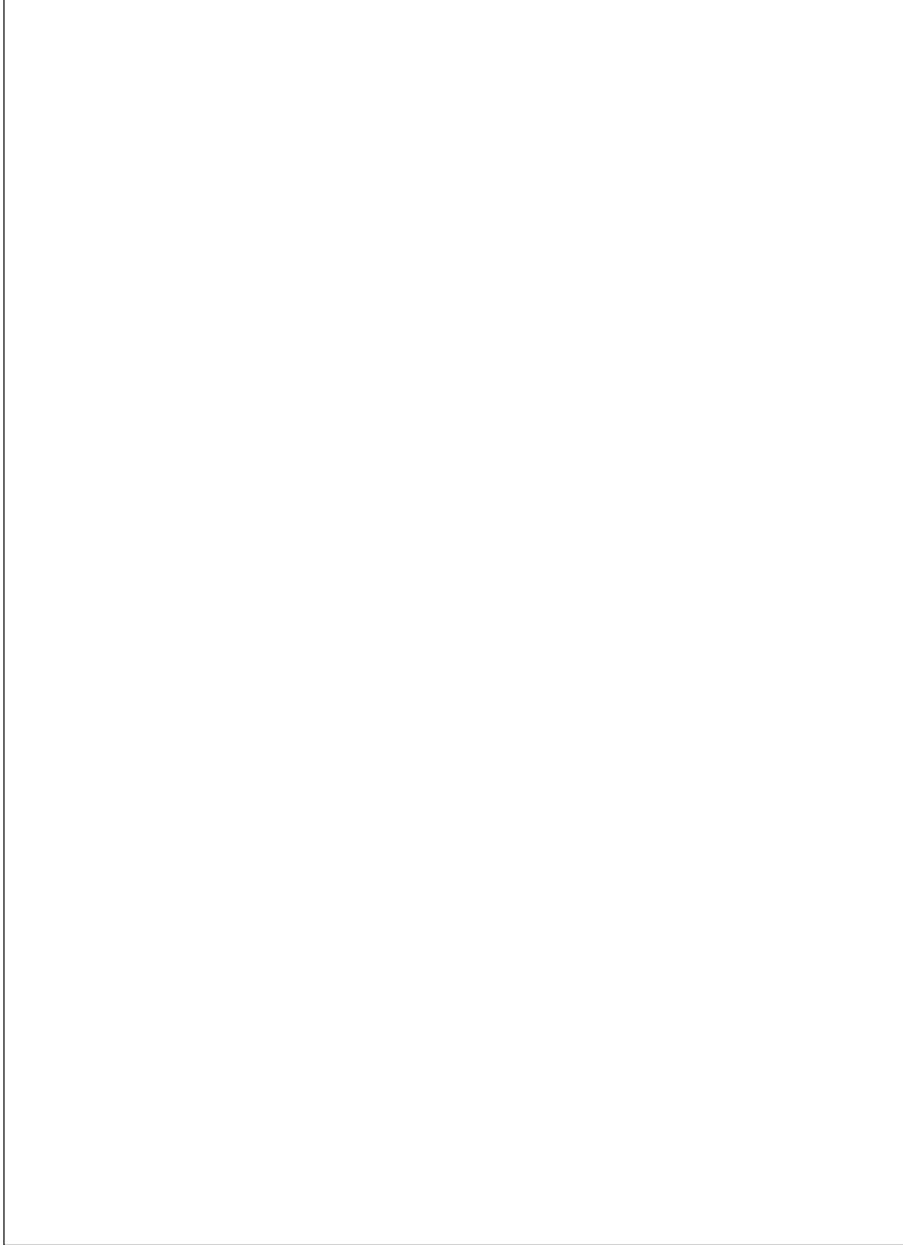


See next page

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Design **frame two** for the digital billboard storyboard in the space provided below.



See next page

Question 25 (continued)

- (h) (ii) Explain the logical and hierarchical organisation of the content of your digital billboard frames. (3 marks)

- (iii) Explain the use of typography in your design. (3 marks)

- (iv) Describe **two** advantages of utilising digital billboards rather than traditional print media. (4 marks)

One: _____

Two: _____

(i) Explain the importance of a colour scheme for website design. (3 marks)

(j) Explain the purpose of the Web Design and Applications standard from the World Wide Web Consortium (W3C) standards for graphics. (3 marks)

(k) Explain how the navigation controls for an app would differ from those of a website. (3 marks)

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Question 25 (continued)

- (l) Explain to the event manager for Harmony Horizon Festival **three** security measures that can be implemented to ensure that the processing of customer data via the website and app is secure. (9 marks)

One: _____

Two: _____

Three: _____

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

The event manager for Harmony Horizon Festival would like to evaluate the outsourcing of the future design and maintenance of the website.

- (m) Explain **one** advantage for local outsourcing and **one** advantage for global outsourcing in terms of how each approach may contribute to the overall efficiency and effectiveness of the design process. (6 marks)

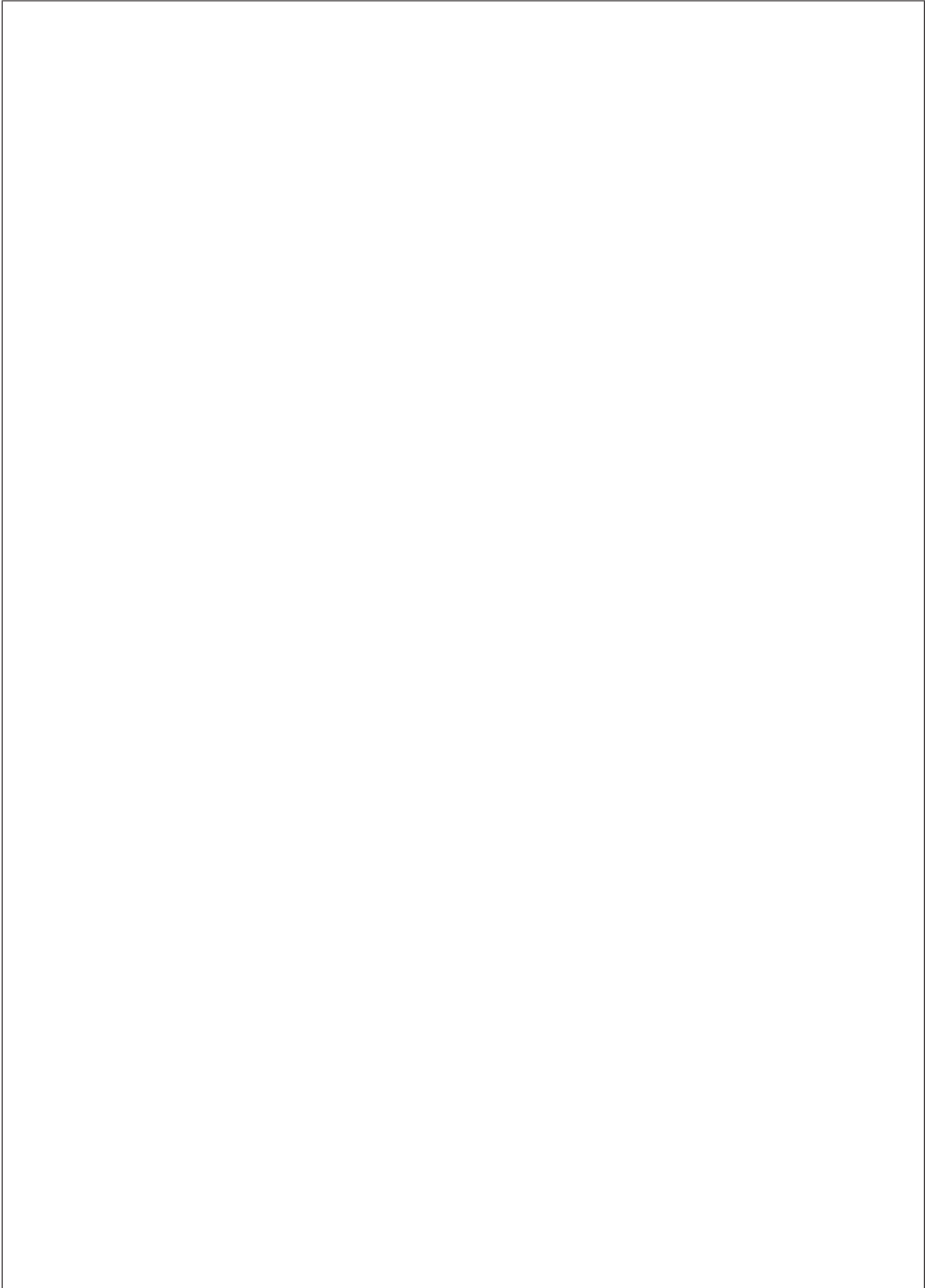
Local outsourcing: _____

Global outsourcing: _____

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Supplementary page

Question number: _____



DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Copyright

© School Curriculum and Standards Authority, 2024

This document – apart from any third-party copyright material contained in it – may be freely copied, or communicated on an intranet, for non-commercial purposes in educational institutions, provided that it is not changed and that the School Curriculum and Standards Authority (the Authority) is acknowledged as the copyright owner, and that the Authority's moral rights are not infringed.

Copying or communication for any other purpose can be done only within the terms of the *Copyright Act 1968* or with prior written permission of the Authority. Copying or communication of any third-party copyright material can be done only within the terms of the *Copyright Act 1968* or with permission of the copyright owners.

Any content in this document that has been derived from the Australian Curriculum may be used under the terms of the Creative Commons [Attribution 4.0 International \(CC BY\)](https://creativecommons.org/licenses/by/4.0/) licence.

*Published by the School Curriculum and Standards Authority of Western Australia
303 Sevenoaks Street
CANNINGTON WA 6107*