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LUI					School code
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Given name/s					Attach your
Family name					barcode ID label here
External as	sessme	nt 2021			Book of books used
					Question and response book

# **Digital Solutions**

## Time allowed

- Perusal time 15 minutes
- Working time 120 minutes

## **General instructions**

- Answer all questions in this question and response book.
- Planning paper will not be marked.

## Section 1 (10 marks)

• 10 multiple choice questions

# Section 2 (36 marks)

• 3 short response questions

# Section 3 (26 marks)

• 1 extended response question



# DO NOT WRITE ON THIS PAGE

THIS PAGE WILL NOT BE MARKED

# Section 1

## Instructions

- Choose the best answer for Questions 1–10.
- This section has 10 questions and is worth 10 marks.
- Use a 2B pencil to fill in the A, B, C or D answer bubble completely.
- If you change your mind or make a mistake, use an eraser to remove your response and fill in the new answer bubble completely.

	А	В	С	D
Example:		$\bigcirc$	$\bigcirc$	$\bigcirc$

	А	В	С	D
1.	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
2.	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
3.	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
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6.	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
7.	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
8.	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
9.	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
10.	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

# Section 2

### Instructions

- Write using black or blue pen.
- If you need more space for a response, use the additional pages at the back of this book.
  - On the additional pages, write the question number you are responding to.
  - Cancel any incorrect response by ruling a single diagonal line through your work.
  - Write the page number of your alternative/additional response, i.e. See page ...
  - If you do not do this, your original response will be marked.
- This section has three questions and is worth 36 marks.

## **QUESTION 11 (13 marks)**

Business owners use an online platform to sell products. The essential features of the platform are listed. Platform:

- · allows customers and business owners to register and log in
- has four data stores (customer data, products, shopping cart and orders)
- processes order payments
- confirms orders with customers and business owners after successful payment.

#### Customers:

- register an account
- select products that appear in the shopping cart
- may continue shopping after viewing the shopping cart.

Business owners:

- · access confirmed orders
- · access customer account details
- update products and prices.

Symbolise data flow for this system using a diagram that includes all essential features listed.

**Note:** If you make a mistake in the diagram, cancel it by ruling a single diagonal line through your work and use the additional response space at the back of this question and response book.

Do not write outside this box.

## **QUESTION 12 (18 marks)**

A mobile application (app) allows car owners to remotely unlock their cars if they lock the keys inside or their keys malfunction. Once users have created an account, they can request a remote unlock by entering their username and password.

The user data that is required to set up an account includes:

- full name
- date of birth
- home address
- driver licence number
- vehicle make, model and colour
- vehicle registration.
  - a) Analyse the information and evaluate risks to data confidentiality, integrity and availability for this app. Justify your response with three examples.

[6 marks]

) Identify a relevant Australian Privacy Principle and explain an ethical consideration when using app data.	[2 mark
ustralian Privacy Principle:	
thical consideration:	

Do

a password in transit. Perform a desk check for five iterations to decrypt the password 'KYIWW'.	[2 marks

d) A friend is interested in learning more about encryption. Use pseudocode to symbolise a simple Caesar cipher as a demonstration. [8 marks] Do not write outside this box.

## **QUESTION 13 (5 marks)**

Do not

In an online silent auction, items are posted on a public website and participants post a secret bid on the items they would like to purchase. Bidders cannot see each other's bids. The bidding period is 7 consecutive days.

At the end of the auction, all bid values are revealed on the website and the highest bidder pays the amount they posted to obtain the item.

a) Explain how checksums, encryption and authentication would improve the security of the data exchange in this scenario.

[3 marks]

write outside this box.	

b) Recommend one encryption method to securely store auction data and justify your response. [2 marks] Do not write outside this box.

# Section 3

## Instruction

• This section has one question and is worth 26 marks.

## **QUESTION 14 (26 marks)**

a) Analyse Stimulus 1 in the stimulus book. Describe all the ways space, line and tone are used and how visual hierarchy, proximity and alignment have informed development of the match manager user interface.

[6 marks]

app and	d explain the relationship between them.	[6 mark

\ <b>T</b> T '		
c) Usi bas	ng Stimulus 1 and 2 in the stimulus book, make three justified recommendations, ed on survey feedback, to improve data security of the match manager system.	[6 ma
ous	ed on survey recubuck, to improve dute security of the match manager system.	<u>1</u> 0 ma
Recomr		
	nendation and justification 1:	

Recommendation	and justificatio	on 2:	 	 
Decommondation	and instification			
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d)	Symbolise four changes to the login view that address all useability issues identified in
	Stimulus 2. Justify how useability principles have informed your changes.

[8 marks]

**Note:** If you make a mistake in the diagram, cancel it by ruling a single diagonal line through your work and use the additional response space at the back of this question and response book.

# **END OF PAPER**

Write the question number you are responding to.							

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