



Victorian Certificate of Education 2011

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Letter

Figures

Words

--

INFORMATION TECHNOLOGY: IT APPLICATIONS

Written examination

Monday 14 November 2011

Reading time: 11.45 am to 12.00 noon (15 minutes)

Writing time: 12.00 noon to 2.00 pm (2 hours)

QUESTION AND ANSWER BOOK

Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	20	20	20
B	11	11	70
			Total 90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied

- Question and answer book of 18 pages.
- Answer sheet for multiple-choice questions.

Instructions

- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, **and** sign your name in the space provided to verify this.
- All written responses must be in English.

At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

SECTION A – Multiple-choice questions**Instructions for Section A**

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.

Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

Question 1

A club offers every new member the chance to buy one scarf and/or one badge and/or one poster.

The most efficient technique for validating each member's selection when they complete an online membership form would be

- A. a set of three text boxes.
- B. a set of three check boxes.
- C. a drop-down list with three items.
- D. a link to a blank order form to print.

Question 2

Which of the following components connects multiple networks?

- A. router
- B. switch
- C. wireless access point
- D. network interface card

Question 3

The analysis of a proposed website solution to support a VCE online community would include

- A. reporting the extent to which the solution meets the requirements of the clients six months after the clients have started using the website.
- B. specifying a timeline, outlining what data will be collected and by what methods and techniques, and how the data relates to the criteria.
- C. determining the evaluation criteria and what measures will be used to judge whether or not the solution requirements have been met.
- D. identifying the constraints of the solution. Typically these include cost, speed of processing, requirements of users, security, compatibility, level of expertise, capacity and availability of equipment.

Question 4

A firewall is used to

- A. illegally destroy data on a network.
- B. upload and download files from the Internet.
- C. minimise the risk of fire in a networked information system.
- D. prevent unauthorised access to data and information on a network.

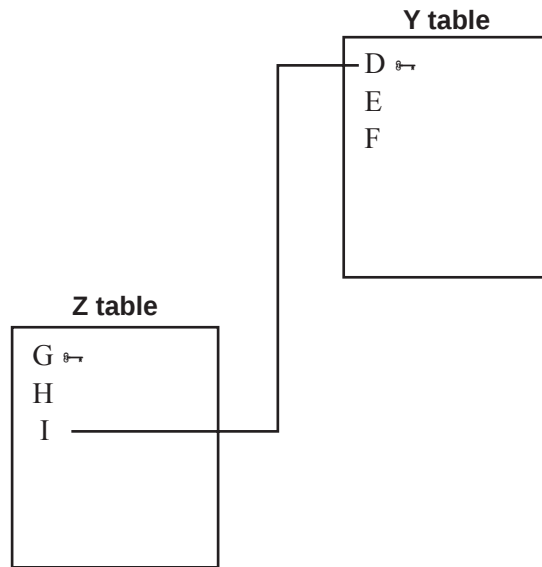
Question 5

Determining the benefits a solution has for a user is stated in the

- A. scope.
- B. requirements.
- C. functionality plan.
- D. data manipulation document.

Question 6

The design below shows the Y and Z tables of a relational database.



The relationship shown from the Y table to the Z table is one to many.

This means that

- A. I is a foreign key in Z.
- B. F is a foreign key in Y.
- C. D is a foreign key in Y.
- D. G is a foreign key in Z.

Question 7

This section of a data sheet for use by a school's sports administrator shows primary and foreign keys.

CoachID	PlayerID	Team	AgeGroup	Sport
0004	0234	Flyers	U-15	Hockey
0003	0435	Macs	U-15	Tennis
0004	0452	Flyers	U-13	Hockey

The primary key for this data sheet is

- A. CoachID
- B. PlayerID
- C. Team
- D. AgeGroup

Question 8

An effective validation technique in a database is evident when

- A. all data is reasonable.
- B. all reports are accurate.
- C. records are sorted reasonably.
- D. calculated fields return correct answers.

Question 9

A retail business based in country Victoria sells poultry at one location.

To make a tactical decision about selling poultry at an additional location, what information would the owner need?

- A. yearly profits
- B. monthly sales
- C. long-term profit objectives
- D. poultry production rates in Victoria 2007–2010

Question 10

Sandra manages a Victorian local council's communication projects. She has obtained from a friend a copy of a customer database belonging to a large sports gear company.

Sandra wants to promote the council's new recreation centre and asks the IT project officer of her website to create a mailing list from the customer database so she can mail vouchers to the homes of potential members of the recreation centre.

The legislation the IT project officer should cite to convince Sandra her idea is a bad one is

- A. *Spam Act 2003*.
- B. *Copyright Act 1968*.
- C. *Health Records Act 2001*.
- D. *Information Privacy Act 2000*.

Question 11

The design tools to best represent relationships in the solution for a new website would include

- A. mock-up and storyboard.
- B. layout diagram and storyboard.
- C. hierarchy chart and site map.
- D. entity-relationship diagram and mock-up.

Question 12

The best description of a tutorial for a software product is

- A. a response to the current content the user is accessing.
- B. brief simple instructions on how to begin using the product.
- C. step-by-step instructions for using the features and functions of the product.
- D. important information about system requirements and configuration settings.

Question 13

When the four items 34, 17, 6, 20 are entered as text data and sorted from A to Z the list returned is

- A. 6, 17, 20, 34
- B. 17, 20, 34, 6
- C. 34, 20, 17, 6
- D. 34, 17, 6, 20

Question 14

Which is the most appropriate design tool to represent the appearance of a new website solution?

- A. flow chart
- B. layout diagram
- C. entity-relationship diagram
- D. Input-Process-Output chart

Question 15

The following data sheet shows the bookings for a holiday house.

CustID	CustLastName	CustFirstName	NumAdults	NumChildren	NumNights
12345	Jones	Steve	2	0	5
12678	McMillan	Meredith	3	5	12
12890	Nguyen	Jenny	2	3	3
12368	Smith	Joel	1	0	2

Which design for a query will return the cost of accommodation if adults pay \$90 each per night and children each pay 50% of the adult price?

- A. Cost: [NumAdults]*[NumChildren]*[NumNights]*(90-0.50)
- B. Cost: [NumAdults]*[NumNights]+[NumChildren]*[NumNights]+(90-0.50)
- C. Cost: [NumAdults]*[NumNights]*90+[NumChildren]*[NumNights]*(90-0.50)
- D. Cost: [NumAdults]*[NumNights]*90+[NumChildren]*[NumNights]*(0.50*90)

Question 16

Bobby is updating a company's relational database so that the details of any customer who has not purchased anything since 2005 are removed from the customer table and are archived.

The design for search criteria would be

- A. Date_Last_Purchase <= Today -6
- B. Date_Last_Purchase > 31/12/2005
- C. Date_Last_Purchase < 01/01/2006
- D. Date_Last_Purchase <= 01/01/2006

Question 17

A small business plans to replace a weekly full backup of data stored on two removable hard drives with a daily incremental backup stored online.

Which is the best criterion to evaluate the effectiveness of the new backup strategy?

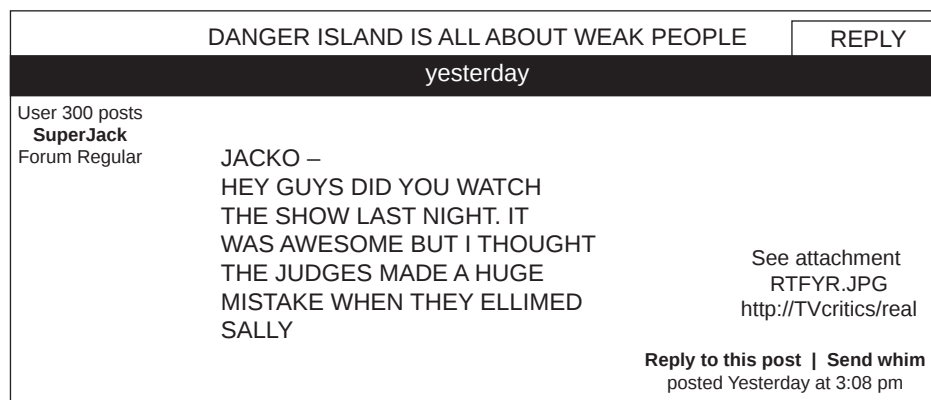
- A. Do staff find the new backup procedure easier?
- B. Is all the data backed up online at the end of each week?
- C. Does the online backup process slow down transactions?
- D. Is it cheaper to use the online backup than the removable hard drives?

Question 18

Georgie has received an email from her local sports club which offers her \$15 for every person who buys a booklet of 20 cinema tickets on her recommendation. Georgie does not really want to buy a booklet of the tickets herself because she does not think it is good value and is wondering if recommending it to close friends is okay.

Georgie is facing

- A. a legal obligation.
- B. an ethical dilemma.
- C. a technical protocol.
- D. a security procedure.

Question 19

The forum post shown above does not conform to online social protocols because

- A. the topic heading is too long.
- B. it is signed with a nickname.
- C. the content text is all in upper case.
- D. the attachment has an unrecognisable file name.

Question 20

The recovery plan in a disaster recovery strategy includes

- A. procedures to follow when shutting down equipment and removing files.
- B. an unannounced disaster simulation to help identify points of weakness in the evacuation procedures.
- C. identification of the information technology services that must be restored first and a secondary site where data can be processed.
- D. a listing of the people who are responsible for gathering the backup resources and for transporting them to a secondary processing site.

SECTION B**Instructions for Section B**

Answer **all** questions in the spaces provided.

Question 1

How should sales staff dispose of customers' contact and financial data stored on their laptops?

1 mark

Question 2

Fashion Design is an electronic magazine being created for communicating the latest trends in teenage fashions. The magazine will collect data from users and store it in a database.

- a. At what stage of the problem-solving methodology should the solution be tested to see that it does what it was intended to do?

1 mark

- b. List two tasks typically involved in testing.

2 marks

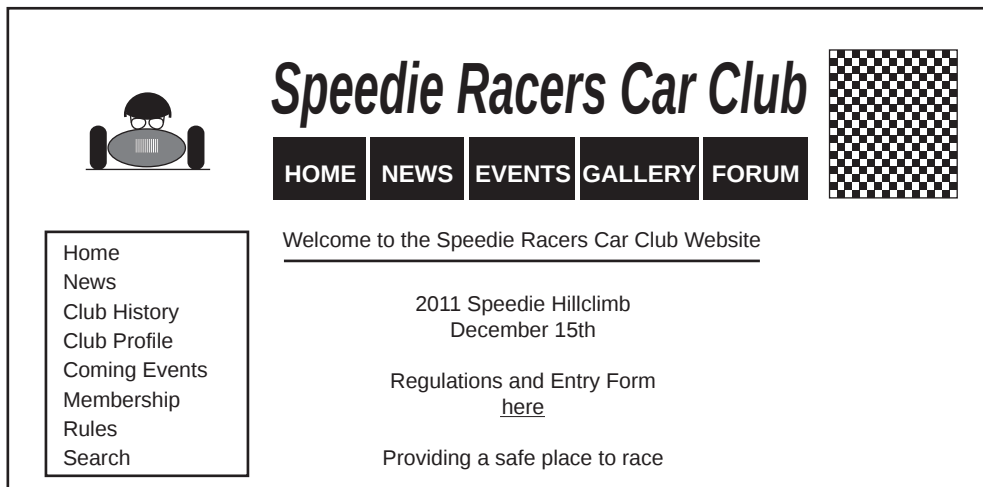
Question 3

Explain two benefits of normalising data in a Relational Database Management System (RDBMS).

2 marks

Question 4

Speedie Racers Car Club is developing its website to provide information to the public about the club and to provide forum facilities for its members. The home page is shown below.



- a. Identify one format used on the home page and explain how it enhances the effectiveness of the website for users.

Format _____

Explanation _____

2 marks

- b. Recommend a test that could be used to ensure that the forum performs as it should for members. Justify your answer.

2 marks

Question 5

Lawrence and his sister belong to a youth group that holds social functions where members can meet and discuss issues affecting young people. They both communicate with friends online and have suggested the youth group could set up a website with the aims of

- increasing attendance at youth group events
- increasing awareness of community events
- encouraging more young people to be active citizens
- facilitating the discussion of issues.

a. Suggest the type of website that would best suit the youth group's needs. Justify your answer.

2 marks

b. State two features that could be included in the website to assist in building the youth group's collective identity.

2 marks

c. Identify and explain two social online protocols, other than meeting legal obligations, that should be followed on the youth group's website.

1.

2.

4 marks

Question 6

G Petto has been making puppets and toys for his family and friends for many years. His nephew Paul believes that he can create a website to help his uncle sell custom-made puppets and toys online.

- a. List two different items of data that customers using the website would need to provide to successfully have the toys purchased and delivered.

2 marks

- b. Explain why Paul should use a text box and not a drop-down list for the requirements of the custom-made puppets.

2 marks

- c. Recommend one technique to validate numeric customer data entered into the website. Justify your answer.

2 marks

Paul is developing a database to manage the data and information for his uncle's business. He has included a Customer table and a Toys table in the database.

- d.** Complete the data types for each table.

Customer table		Toys table	
Field Name	Data Type	Field Name	Data Type
CustomerID	Unique Number	ToyID	Unique Number
CustomerGender		ToyCost	

2 marks

- e.** Explain how the CustomerID and ToyID fields will enhance the effectiveness of retrieving information.

2 marks

- f.** Draw an entity-relationship (ER) diagram to represent the tables shown in **part d.**

3 marks

Question 8

After some problems with the theft of patient data by dishonest employees, a Victorian hospital has proposed new policies for all staff. These include a new procedure stating that all emails coming in to and going out from the hospital's network are available for managers to read. Many employees are upset by this proposed change.

- a. Explain one legal obligation the hospital has regarding patient data.

State the relevant Act.

2 marks

- b. Discuss possible consequences for the hospital if the new procedure is implemented despite the negative feedback from employees.

2 marks

- c. The hospital decided to implement the new policy. A manager is checking the emails when he reads that one staff member is planning to take a sick day and go to the beach. The manager is faced with an ethical dilemma.

Explain what the manager should consider before deciding whether to talk to the employee.

2 marks

- d. Recommend an alternative procedure the hospital could follow to reduce data theft.

3 marks

Question 9

Visiting lecturers give lectures to students at colleges across the state. The data used to manage the lectures is shown below as spreadsheets as well as database tables.

Spreadsheet**Lecture sheet**

	A	B	C	D	E	F	G
1	ID_Lecturer	ID_College	College	Campus	Suburb	State	Postcode
2	BALR	College001	Albatross	Melbourne	Richmond	Vic	3121
3	BALR	College002	Swan	Ballarat	Sebastopol	Vic	3356
4	HALC	College003	Sparrow	Bendigo	Golden Square	Vic	3555
5	JAMF	College004	Kite	Sale	Sale	Vic	3850
6	BROS	College005	Hawk	Melbourne	Dandenong	Vic	3175
7	AING	College006	Eagle	Melbourne	Mentone	Vic	3194
8	BALR	College007	Seagull	Castlemaine	Castlemaine	Vic	3450
9	BROS	College008	Robin	Mildura	Red Cliffs	Vic	3496
10	HALC	College009	Hawk	Melbourne	Melton	Vic	3337

Spreadsheet**Feedback sheet**

	A	B	C	D	E	F
1	ID_Report	ID_Lecturer	Session	SessionDate	NumberStudents	SessionReport
2	0001	HALC	Exam Prep	1/7/2011	155	Follow-up
3	0002	JAMF	Study Time	3/8/2011	206	Feedback
4	0003	BALR	Past Exams	5/10/2011	58	Summary
5	0004	JAMF	Study Time	6/10/2011	107	Follow-up

OR

Database**Lecture table**

ID_Lecturer	ID_College	College	Campus	Suburb	State	Postcode
BALR	College001	Albatross	Melbourne	Richmond	Vic	3121
BALR	College002	Swan	Ballarat	Sebastopol	Vic	3356
HALC	College003	Sparrow	Bendigo	Golden Square	Vic	3555
JAMF	College004	Kite	Sale	Sale	Vic	3850
BROS	College005	Hawk	Melbourne	Dandenong	Vic	3175
AING	College006	Eagle	Melbourne	Mentone	Vic	3194
BALR	College007	Seagull	Castlemaine	Castlemaine	Vic	3450
BROS	College008	Robin	Mildura	Red Cliffs	Vic	3496
HALC	College009	Hawk	Melbourne	Melton	Vic	3337

Database**Feedback table**

ID_Report	ID_Lecturer	Session	SessionDate	NumberStudents	SessionReport
0001	HALC	Exam Prep	1/7/2011	155	Follow-up
0002	JAMF	Study Time	3/8/2011	206	Feedback
0003	BALR	Past Exams	5/10/2011	58	Summary
0004	JAMF	Study Time	6/10/2011	107	Follow-up

Indicate with a tick (✓) one software type your answers will refer to.

Spreadsheet ☐ Relational Database Management System ☐

- a. Describe how the lecture data could be manipulated to make it easier for lecturers to see where they are timetabled.

2 marks

- b. Explain how all lectures and colleges for lecturer BALR can be listed.

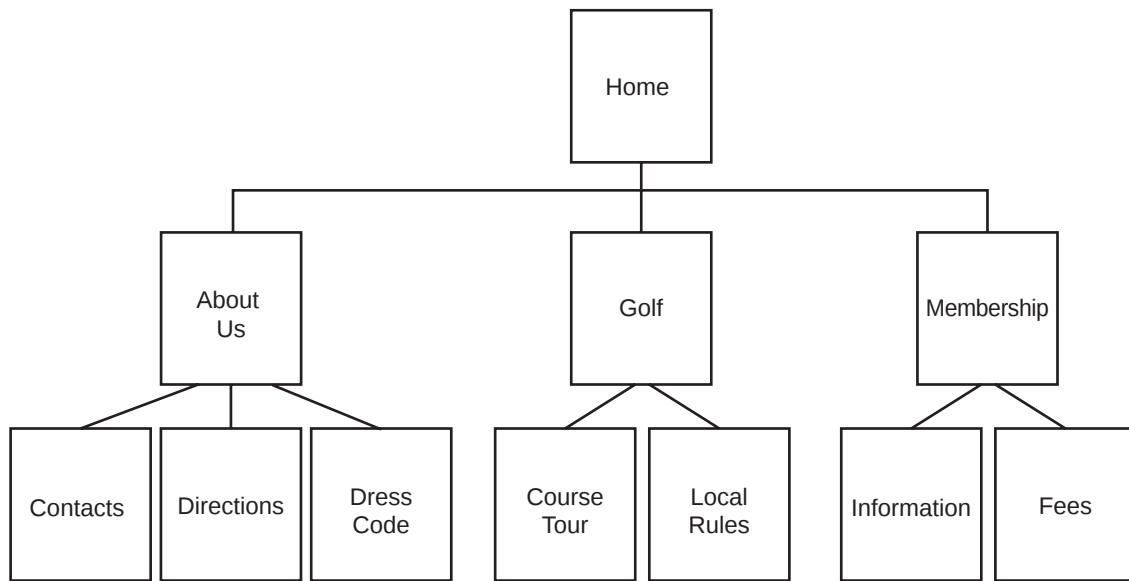
2 marks

- c. Describe a software technique used to determine the total number of students attending all of the lectures.

2 marks

Question 10

ABC Golf Club has a website which provides general information to visitors and members. The current site map is shown below.

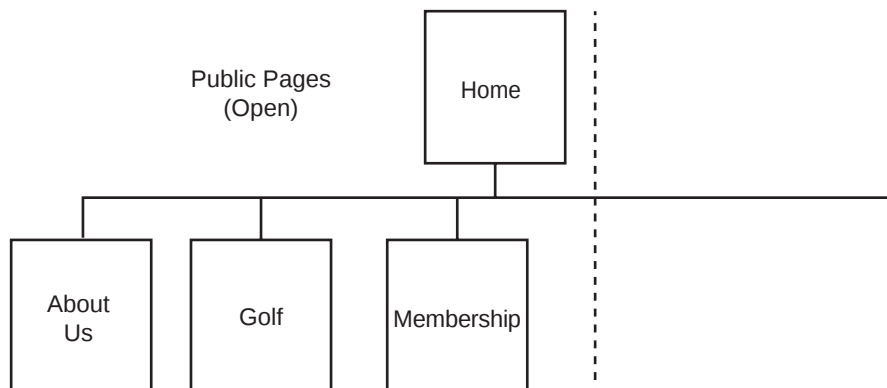


ABC Golf Club would like to have a Members Only section for their website. This would allow members to book a game online, keep their personal details up to date and access an online space on the match results.

- a. Name one appropriate navigation link ABC Golf Club could use in a new Members Only section.

1 mark

- b. On the site map below, indicate where the new web pages would be shown.



3 marks

- c. Describe a technique for protecting the personal information of members on the website.

2 marks

- d. The online space for members will allow them to discuss the rules of golf. Some members have suggested a wiki, others a forum. Would you recommend a forum or a wiki? Justify your answer.

Indicate your preference with a tick (✓).

Forum

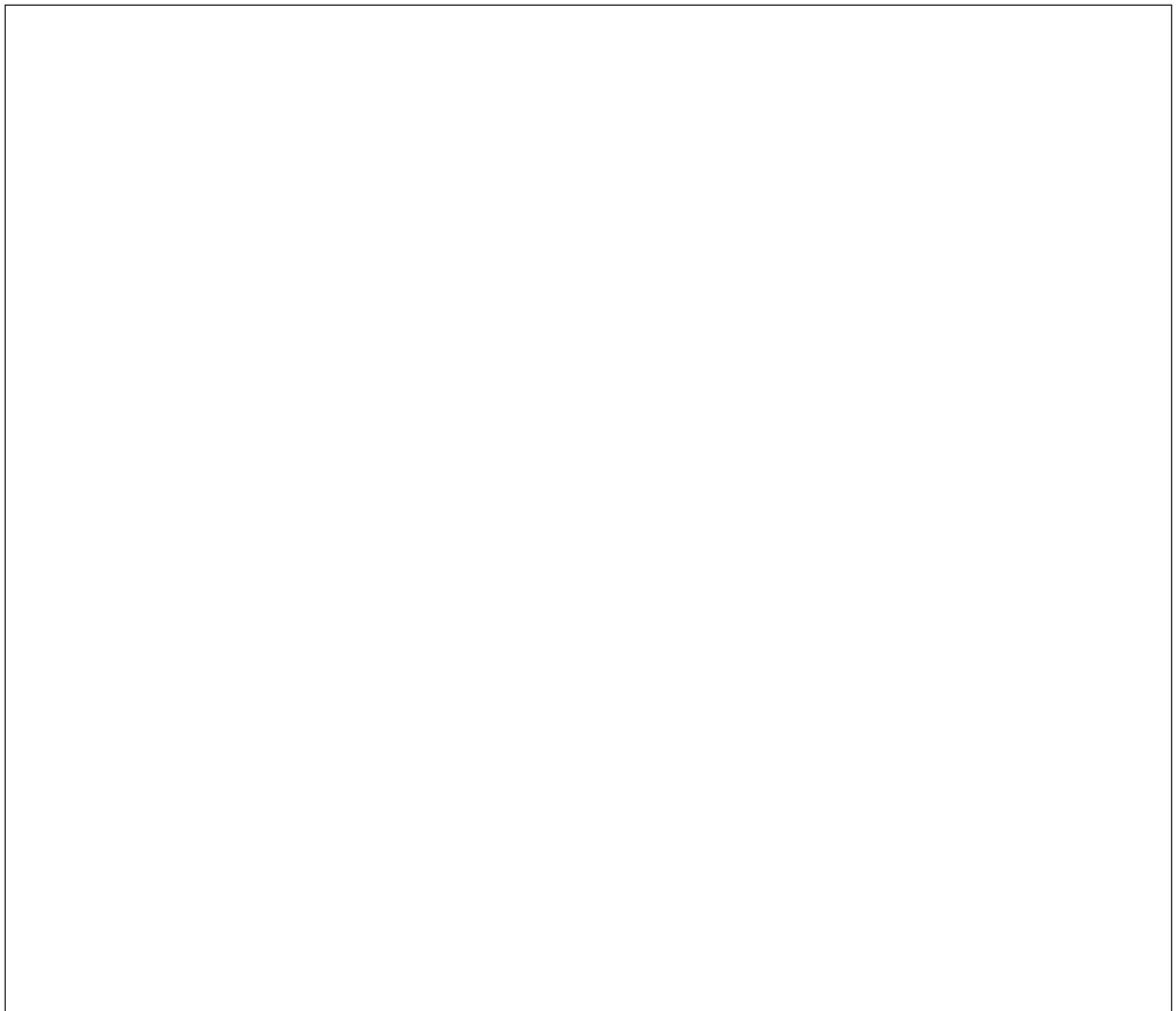
☐

Wiki

☐

2 marks

- e. Draw a mock-up of the home page of ABC Golf Club including access to the new Members Only section.



3 marks

Question 11

A team of seven biologists researching the eating habits and movements of koalas in a national park send descriptions, images and maps to each other and to head office while the biologists are working.

The team currently uses digital cameras to capture images and wireless laptops to input data and email attachments to head office. At the end of each day the data on each laptop is backed up to a removable hard disk carried in a backpack by one of the biologists.

Head office has suggested that the biologists use cloud computing to back up their data as it is collected.

- a.** Explain how this suggestion could improve the timeliness of their data.

2 marks

- b.** State a criterion for evaluating the communication of image data to the cloud.

1 mark

The biologists are worried that criminals will intercept their data and use it to trap koalas for illegal zoos.

- c.** Recommend equipment to prevent criminal access to the data as it is communicated.

2 marks