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YEAR 12 *Trial Exam Paper*

2020

APPLIED COMPUTING: SOFTWARE DEVELOPMENT

Written examination

Sample responses

This book presents:

➢ high-level sample responses
➢ mark allocations
➢ tips.

SECTION A – Multiple-choice questions

Question	Answer
1	*D*
2	*C*
3	*B*
4	*B*
5	*A*
6	*C*
7	*D*
8	*B*
9	*D*
10	*C*
11	*A*
12	*D*
13	*C*
14	*D*
15	*A*
16	*C*
17	*D*
18	*A*
19	*B*
20	*B*

Question 1

Answer: D

Explanatory notes

A milestone is a zero-duration task that indicates an important date in the project plan. Task A is a predecessor, as it precedes Task B. Parallel tasks occur simultaneously, not one after the other. A dependent task cannot start until another task is completed. Task B is therefore a dependent task.

Question 2

Answer: C

Explanatory notes

Portability relates to how well or easily a system can be installed ('ported') on different operating systems. Maintainability involves keeping the system working and running (maintaining it), usability relates to how easy a system is to learn and use, and reliability relates to how much (and how long) it can be depended upon to function as it is designed.

Question 3

Answer: B

Explanatory notes

Accuracy involves ensuring that the data is correct, complete and consistent with the context in which it was collected. Relevant data is data that most closely corresponds to what a person is seeking to collect. Authentic data is when the data has come from the author it claims to be from, has not been changed or modified, and does not misrepresent itself. Reasonable data passes a reasonableness test, where the data is considered logically possible or plausible.

Question 4

Answer: B

Explanatory notes

Both instructions and statements are single lines of code; however, there is mention of at least one statement before a portion of code is executed, which means there is more than a single line of code. Xander is checking to see if a condition is met given that the code will execute 'depending on the outcome of those statements'.

Question 5

Answer: A

Explanatory notes

The control structure is an iteration as it iterates (loops) over each element in the array once in order to execute the code within that structure. While there is a conditional (selection) statement inside the 'For' loop, the condition does not appear on the line given in the question stem. A single line of code could not be considered a sequence.

SECTION A

Question 6

Answer: C

Explanatory notes

Methods are functions or procedures within classes and objects (instantiations of classes). There is no indication that the pseudocode is contained within a class and there are no brackets at the end of 'element'. Arrays access data using index values, such as element[0], which is not what is shown here. Dictionaries (associative arrays) access data using (key, value) pairs, such as element['key'], which is not what is shown here. The pseudocode shows that the element variable has a field called 'value' in it, which makes it a record.

Question 7

Answer: D

Explanatory notes

The conditional statement within the pseudocode checks to see if the 'element.value' record is greater than the 'h' record being stored. If it is greater, the current element replaces what was being held in 'h'. After the iteration is completed, the final 'h' record is returned, which is now guaranteed to be the highest in the array.

Question 8

Answer: B

Explanatory notes

The data type that is most appropriate to use to return whether something has occurred or not is Boolean, as it can provide the values 'True' or 'False' (1 or 0) to indicate this. While an integer could also return 1 or 0, this is not the most appropriate selection, as Boolean values are more efficient in terms of storage. This is also the case for the character data type. Floating point numbers would not be useful here, as there is no need to store any type of decimal point information.

Tip

- *Selecting the most appropriate data type is important in software development, as it can have an impact on the efficiency of a program in relation to how much RAM it uses. Integers, for example, use more RAM than Boolean values.*

Question 9

Answer: D

Explanatory notes

Both binary and linear are searching algorithms, not sorting algorithms. While both selection sort and quick sort use pivots and partitions, only quick sort does this recursively. A traditional implementation of selection sort is an in-place comparison sorting algorithm that uses iterations, not recursion.

Tip

- *While most programming languages have inbuilt searching and sorting algorithms, making it technically unnecessary to implement the algorithms in the Study Design, you should still implement them in your chosen programming language so you have a clear understanding of how they work.*

Question 10

Answer: C

Explanatory notes

Option A does not provide a descriptive enough name for the CSV file for it to be an effective name. Similarly, chickenCustSalesData does not include the date the file was created, which would not be as effective as options C and D, which both include the date. As Hattie wants to store similar CSV files at the end of each year, it's important that a date stamp of some kind is used. The most effective selection between options C and D is option C, as it includes a descriptive name (customer egg sales) as well as a date format that can be sorted in the computer system.

Question 11

Answer: A

Explanatory notes

Renata has written code that intercepts information before it reaches its destination, keeping some of it and then modifying it before passing it on. This is the definition of a man-in-the-middle attack. Social engineering involves manipulating a person for personal information or transactions to occur, such as when phishing occurs. Cross-site scripting is when malicious scripts are inserted into regular webpage forms by taking advantage of improperly validated input fields to provide unauthorised access to the server connected to that form. While Renata's software could potentially cause a data breach, depending on what information is harvested, this is not the best description of the software that she has written.

Tip

- *While the Study Design lists 'social engineering' as a single entry, there are different types of social engineering that you should be aware of. Phishing, for example, is when a person is deceived into providing personal or financial information through social engineering.*

SECTION A

Question 12

Answer: D

Explanatory notes

The medical centre needs to take care that the data stored in the new software complies with the privacy principles outlined in the *Privacy Act*, as they are a private health service provider. For the same reason, as well as being a Victorian medical centre, they must also comply with the *Health Records Act*, as this applies to personal health information being collected in Victoria. Sandra has created the software for her employer, but she has done so in her own time, so the medical centre needs to consider the *Copyright Act*, as Sandra is the author of the software. The medical centre does not need to consider the *Privacy and Data Protection Act* as, while they are a Victorian company, the Act applies only to government departments, ministers, local councils, statutory offices, government schools etc. Private sector businesses only need to comply with this Act if they are a contracted service provider to the government, and there is no evidence that the medical centre is such a provider.

Tip

• *It is important that you know the scope of legislation. For example, state-based legislation applies only in a particular state, while other legislation might only apply to particular groups or companies.*

Question 13

Answer: C

Explanatory notes

The function is checking to see if anything has been input in the given username and password strings. This is achieved through the use of the 'IF' conditional statement and by comparing each of the variables to "" – the representation in pseudocode of an empty string. Type checking is a validation technique that tests to see if an input is of the correct data type while range checking tests to see if an input is within a valid range, neither of which is occurring here. While the code does encrypt the password before checking it against the user's password, this is not a type of validation.

Question 14

Answer: D

Explanatory notes

As the tester is able to run the program, it cannot have thrown a syntax error, as these errors prevent a program from compiling. Given the algorithm, the program will begin even if there are no users in the user database, as it will simply assign a null value to the variable allUsers. This excludes option C as a possible answer. The iteration in the algorithm states that it should run while allUsers is not empty – which means that it does not run if allUsers is empty. This means that the return value will be the final 'False' in the algorithm. As the iteration handles the case of the database being empty, it would not throw a runtime error.

Question 15

Answer: A

Explanatory notes

The waterfall model requires that all stages of a project be well-defined. Each stage must be completed and signed off before the next stage begins, and all stages are only progressed through once. As the process that Wende is overseeing occurs multiple times over the lifecycle of the project, he cannot be using the waterfall model. Iterative models are very similar to waterfall models, the key difference being that testing occurs at the end of each stage, rather than just once at the end. However, this is not what is described in this scenario. While the spiral model does involve repeating processes over the lifecycle of the project, the deliverable at the end of each cycle is a prototype, not a working product. Wende is using the agile development model, where smaller elements of a larger project are completed in 'sprints' and provided to the client in working condition. Each subsequent sprint provides more and more functionality until the whole project has been delivered.

Question 16

Answer: C

Explanatory notes

Both options A and B are relevant questions if Daniel were looking to implement timing or multiple-use restrictions within his booking software, but they are not particularly relevant to the user interface. While age may be relevant to a question of usability, it is not an automatic assumption that someone who is older is not competent at using technology. Daniel's best question to ask is option C, which asks for input from the residents as to any accessibility needs, such as text-to-speech capabilities, multiple input methods or support for foreign language translation.

Question 17

Answer: D

Explanatory notes

Option A is an economic constraint, as it involves time. Option B is a legal constraint as it involves privacy and option C is a usability constraint. Because option D is limiting the mode in which users can enter bookings to a touchscreen system, it is a technical constraint.

Question 18

Answer: A

Explanatory notes

The data Winter is entering is reasonable, as it is a valid date. It is authentic because the origin of the data is correct in relation to Australian date formats. It is also relevant data because the date is related to the employee's review. However, Winter has read the dates using the American date format system, and has therefore transposed day with month, as Australian dates are DD/MM/YYYY and American dates are MM/DD/YYYY. This violates the accuracy of the data.

Question 19

Answer: B

Explanatory notes

The two controls Rande wants to implement relate to user authentication for entry into the system. Version control helps to keep track of changes in development or business documents. Password encryption, while a security measure, is not directly linked to the complexity of a password or being locked out if a username and password do not match. Software update rules, similarly, do not relate to the scenario.

Question 20

Answer: B

Explanatory notes

While all of the options are methods of representing designs in a software solution, only the use case diagram will describe how the user will interact with the system. Use case diagrams also show the external systems that interact with a system. Layout diagrams help to show a proposed user interface, while context diagrams and data flow diagrams show how data flows into and out of a system, with the difference being the level of detail shown.

SECTION A

SECTION B – Short-answer questions

Question 1

Sample response

Description	Validation technique
checking that the date entered is between 1/1/1900 and today's date	range check
checking that the PIN has no letters entered	type check
checking that the email address is present	existence check

Mark allocation: 3 marks

- 1 mark for each correct answer (up to 3 marks)

Note: The question keyword is 'state', so the techniques only need to be named, not described.

Question 2

Sample response

Possible ways to manage the risks:

- Limit the third party's access to the data – only buy modules that do not directly interact with the sensitive data.

- Use a confidentiality agreement to reduce the risk of the third party sharing data.

- Only use third parties that are covered by Australian law. International third parties are not subject to any legislation.

Mark allocation: 2 marks

- 1 mark for each valid response (up to 2 marks)

Note: Responses must address the specific question of purchasing modules from the third party, not other ways to get the project back on schedule (such as crashing the project or removing features).

Question 3a.

Sample response

Version control is a system that saves different versions of a program over time and allows a programmer to recall or 'roll back' software to a previous version, which would allow the programmer to recover from disasters such as lost files or malfunctioning code.

Mark allocation: 2 marks

- 1 mark for describing version control
- 1 mark for explaining how it protects software

Question 3b.

Sample response

A software audit is a review of a software program to check its quality. By using an independent auditor, any bias is more likely to be removed and the software can be audited authentically and objectively.

Mark allocation: 2 marks

- 1 mark for describing software auditing
- 1 mark for explaining an advantage of using an independent auditor

Tip

- *Both version control and software auditing are dot points in Unit 4 Outcome 2. These points are new to the Study Design, so you should expect at least one, if not both, to appear on the exam.*

Question 4

Sample response

Annotations can be used to mark on a project plan (such as a Gantt chart) where tasks have been completed on time, potential problems that can be monitored or avoided in the future and other important information. For a large project, having consistent annotations can provide a clear indication of which parts of the project have the most problems so that staff can be allocated to those tasks. Each of the four programmers can mark their annotations with an identifier such as their initials or a colour so that the entire team knows who made the annotation.

Mark allocation: 3 marks

- 1 mark for explaining how the technique records progress
- 1 mark for referencing the large project
- 1 mark for referencing the multiple (four) programmers

Tip

- *Even though the assessment of the project plan has been removed from the SAT for 2020, this dot point is still in place and could be assessed.*

Question 5a.

Sample response

Feature of backups	Strategy and justification
timing of the backups	Sachi could implement a nightly differential backup of the files that have changed and a full backup of all files every month. As some files are adjusted regularly, these must have a regular backup (nightly) but many files do not change regularly, hence use of a differential backup. This ensures that data loss is minimised to the previous backup (the previous night) while saving space.
location of the backups	Files could be backed up to a remote server in another location such as a data centre or cloud provider. Backups should be stored offsite in case of a fire, lightning strike or other localised disaster.

Mark allocation: 4 marks

- 1 mark for proposing each strategy which specifically references timing and location (up to 2 marks)

  Note: Simply naming the strategy (e.g. full backup) is worth no marks.

- 1 mark for justifying each strategy, which represents the why and should refer to the how, when or where from the strategy (up to 2 marks)

Question 5b.

Sample response

Feature of archives	Strategy and justification
timing of the archives	Files not in use after a set time (such as two years) could be removed from the main system. Files that are not used regularly should be removed to avoid potential problems such as incompatibility. By archiving first, any files that might be needed can be retrieved. Files that are not restored from the archive within a set time (such as seven years) could be deleted completely.
location of the archive	Archived files are saved to an alternate location (such as a different server, hard drive or cloud storage). This saves space on the intranet servers but allows for retrieval if the file is needed in the future.

Mark allocation: 4 marks

- 1 mark for proposing each strategy that references timing and location (up to 2 marks)
  Note: Simply naming the strategy (e.g. cloud storage) is worth no marks.

- 1 mark for justifying each strategy, which represents the why and should refer to the when or where from the strategy (up to 2 marks)

SECTION B

SECTION C – Case study

Question 1a.

Sample response

Bella and Scott have the goal of creating a robotic vacuum cleaner that is more efficient at cleaning than randomised robotic vacuum cleaners currently on the market.

Note: Students can also refer to the goal of creating a more appealing robotic vacuum cleaner.

Mark allocation: 1 mark

- 1 mark for a correct goal, explained in full

  Note: No marks should be awarded if only a brief mention of a goal is given, such as 'to create a robotic vacuum cleaner'.

Question 1b.

Sample response

Bella has the objective of writing an algorithm that will be able to clean all available floor surfaces much faster than a randomised approach to cleaning.

Scott has the objective of having the vacuum cleaner display humorous emojis based on the material detected.

Note: There are other acceptable answers, such as Bella's objective of putting voice activation in place to increase usability.

Mark allocation: 2 marks

- 1 mark each for a correct explanation of an objective (up to 2 marks)

  Note: No marks should be awarded if only a brief mention of an objective is given, such as 'to write a faster cleaning algorithm'.

Tip

- *Remember that an objective must be measurable, so use either a numerical measure (such as a percentage) or a 'does/does not' measure (such as showing the emojis on the cleaner).*

Question 2

Sample response

One constraint is that they must complete analysis, design and development within the next six months. Another constraint is that the hardware that is purchased/built for RoboMojo will need to support the LED lights that Scott has already purchased.

Note: Students may outline other legitimate constraints from the case study. For example, they have limited funds, which may have an impact on the hardware they will need to purchase/build for RoboMojo.

Mark allocation: 2 marks

- 1 mark for each accurate constraint discussed (up to 2 marks)

Question 3a.

Sample response

Task	Duration (fortnights)	1	2	3	4	5	6	7	8	9	10	11	12
Research available components.	1	▢											
Develop software requirements specification (SRS).	1		▢										
Write algorithms.	2			▣	▣								
Write evaluation criteria.	1			▢									
Refine algorithms.	1					▢							
Write robot software.	2						▢	▣					
Write voice-recognition database.	1								▢				
Test software.	2									▢	▢		
Install software on robot and test.	2											▢	▢

Mark allocation: 2 marks

- 1 mark for 'Write algorithms' having both fortnights 3 and 4 shaded
- 1 mark for shading fortnight 7 for 'Write robot software'

SECTION C

Question 3b.

Sample response

Task	Duration (fortnights)	1	2	3	4	5	6	7	8	9	10	11	12
Research available components.	1	░											
Develop software requirements specification (SRS).	1		◆										
Write algorithms.	2			▓	▓								
Write evaluation criteria.	1			░									
Refine algorithms.	1					◆							
Write robot software.	2						░	▓					
Write voice-recognition database.	1								░				
Test software.	2									░	░		
Install software on robot and test.	2											░	░

Note: The analysis stage milestone must go at the end of 'Develop SRS'. The design stage milestone must go at the end of 'Refine algorithms'.

Mark allocation: 2 marks

- 1 mark for each milestone in the correct place (up to 2 marks)

Note: Students must be able to recognise which tasks are in each stage of the problem-solving methodology.

Tip

- *Students often miss simple instructions such as 'fill in the Gantt chart' as there are no lines for you to write in that indicate this is a question. You must look for every question prompt as indicated by question numbers and sub-part letters.*

SECTION C

15

Question 3c.

Sample response

Write evaluation criteria: As there is a slack fortnight at the end of 'Write evaluation criteria', there is no effect on the overall project.

Test software: 'Install software on robot and test' will be delayed by a fortnight, and therefore the overall project will be delayed by a fortnight.

Mark allocation: 2 marks

- 1 mark for an appropriate response that refers to the entire project (up to 2 marks)

Note: No marks should be awarded for 'task is delayed by a fortnight', i.e. restating the question.

Question 3d.

Sample response

Trying to install partially tested software could reveal a number of bugs that would have been found during isolated testing, or the install may prove incompatibility issues between the software and the robot. Scott and Bella could be forced to work separately, which would require more effort in communicating what they have done and create extra strain on the project.

Mark allocation: 2 marks

- 1 mark for each reasonable problem (up to 2 marks)

Question 4a.

Sample response

Bella's naming convention is more descriptive, which would explain to a programmer what each variable does. Scott's naming convention is more efficient, as it shortens each variable and also includes a descriptor of variable type (fp = floating point, int = integer, b = Boolean).

Mark allocation: 2 marks

- 1 mark for each advantage (up to 2 marks)

Note: Both naming conventions must be addressed; i.e. giving two advantages for Bella's scheme is only worth 1 mark total.

Question 4b.

Sample response

Scott's naming convention will be quicker to write code for, reduce the chance of making typing mistakes and would take less space in the program.

OR

Bella's naming convention will make the programming easier to understand. as each variable is clearly explained by its name.

Mark allocation: 1 mark

- 1 mark for a reasonable justification of either naming convention

Note: Simply stating 'I would choose Bella's' is not enough to warrant the mark.

Question 5a.

Sample response

A binary search requires that the data is sorted before searching begins. Voice recordings of commands have no sensible way of being sorted without being converted from speech to text, which is an extra process and another layer of complexity.

Mark allocation: 1 mark

- 1 mark for recognising that binary search needs to work on sorted data

Question 5b.

Sample response

The alternative is linear search, which would search one at a time from the start through the list of commands until a match was found (a command matching 'return to the base station') or the list was exhausted.

Mark allocation: 2 marks

- 1 mark for identifying linear search
- 1 mark for an explanation of searching from start until found or list exhausted (brute-force searching)

Question 6a.

Sample response

update firmware	process
emoji list	data store

Mark allocation: 2 marks

- 1 mark for each term (up to 2 marks)

Note: Given that the terms are included in the question, these are the only acceptable answers.

Question 6b.

Sample response

A: emoji

B: process voice command

C: firmware log

Mark allocation: 3 marks

- 1 mark for 'emoji' (this is given in the context diagram and must be exact)
- 1 mark for 'process voice command' (there is some leeway in naming this process, but the name must follow the 'verb-object' naming structure)
- 1 mark for 'firmware log' (given that the other data flows to the operations log are 'object-log', this would be the only acceptable answer)

SECTION C

Question 7

Sample response
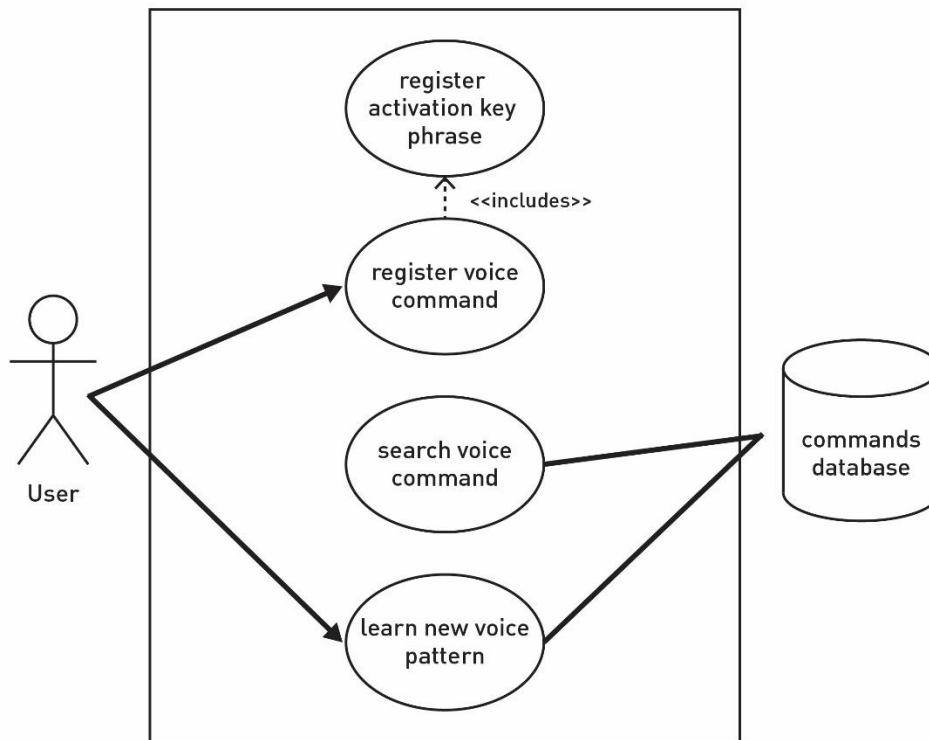
Note: The arrowheads used to indicate the primary actor are optional. The '<<includes>>' must have an arrowhead that points from the base case (register voice command) to the included case (register activation key phrase).

Mark allocation: 5 marks

- 1 mark for each association (up to 5 marks)

Note: If the arrowheads point from the use case to an actor, the mark will not be awarded. To be awarded the mark for '<<includes>>', a dashed arrow must point from the base case to the included case (as in sample response) with the word '<<includes>>' or '<<include>>' written exactly.

Tip

- *For any use case diagram, you should look for <<includes>> or <<extends>>. Make sure you know which way the arrow points in each case.*

Question 8a.

Sample response

Variable name	Data type / structure	Description
isLiquid	Boolean	a value representing whether the material is liquid or not
thickness	floating point number	the thickness in millimetres of a solid material such as a hair fibre
material	record	the entire description of a material, consisting of all data recorded

Mark allocation: 3 marks

- 1 mark for each correct data type (up to 3 marks)

Question 8b.

Sample response

The file is an XML file. XML files present structured data which gives the data meaning and can be easily read by other programs.

Mark allocation: 2 marks

- 1 mark for recognition of an XML file
- 1 mark for a reasonable advantage (such as being structured data)

Question 8c.

Sample response

Test no.	Material	isLiquid	Thickness	Expected results	Actual results
1	water	True	0	'crying'	'crying'
2	human hair	False	0.10	'smiling'	'smiling'
3	cat hair	False	0.03	'tongue'	'smiling'
4	dust	False	0.01	'sneezing'	'smiling'

Mark allocation: 3 marks

- 1 mark for each test of a specific branch of the pseudocode (up to 3 marks)

Note: The exact material name does not matter. Each test must set isLiquid to False and have an appropriate thickness to produce a different result (emoji).

Question 8d.

Sample response

The 'If' conditions on line 4 and line 6 do not have minimum values, so every material that is not liquid is showing the 'smiling' emoji.

Mark allocation: 1 mark

- 1 mark for recognising the lack of minimum values

Note: As both lines have the same error, this is only worth 1 mark.

Question 8e.

Sample response

Line 4: ELSE IF thickness >= 0.05 AND thickness <= 0.15 THEN

Line 6: ELSE IF thickness >= 0.025 AND thickness <= 0.049 THEN

Mark allocation: 2 marks

- 1 mark for each line that is fixed (up to 2 marks)

Note: Students who rewrite the algorithm could be awarded the marks, but with limited lines allocated to write their answers, this is not advised.

Tip

- *Remember to use language-independent syntax when writing pseudocode. A C programmer who uses '&&' to represent 'AND' might not be awarded marks.*

SECTION C

Question 9a.

Sample response

The organised and consistent placement and structure of buttons in Design A would reduce the time required to learn how to use the app. With Design B, it is not obvious what the user can do and the learning time is increased.

Mark allocation: 2 marks

- 1 mark for explaining what is present in the desired design
- 1 mark for explaining what is missing in the other

Note: Both designs must be referenced to be awarded full marks.

Question 9b.

Sample response

Having clear labels on the buttons in Design A reduces the chance of a user clicking the wrong button, increasing the app's effectiveness. With Design B, a novice user could click the wrong option repeatedly and make mistakes while using the app.

Mark allocation: 2 marks

- 1 mark for explaining what is present in the desired design
- 1 mark for explaining what is missing in the other

Note: Both designs must be referenced to be awarded full marks.

Question 9c.

Sample response

In Design B, the 'My RoboMojo' button is the largest and centred on the screen – an experienced user would find the most-used buttons by looking at their size. Design A has no visual priority in terms of size of controls; the buttons and icons are all the same size. For a user with a vision impairment or lack of fine motor control, Design B would be more usable.

Mark allocation: 2 marks

- 1 mark for explaining what is present in the desired design
- 1 mark for explaining what is missing in the other

Note: Both designs must be referenced to be awarded full marks.

Question 10

Sample response

Usability: By responding to voice commands, RoboMojo is more user-friendly and accessible to people who have difficulty with hand controls.

Marketability: By displaying the emojis when it picks up materials, RoboMojo has a 'cool' factor that is likely to be popular with younger people – the competitors' models would be considered boring.

Mark allocation: 4 marks

- 1 mark for identifying each feature of RoboMojo (up to 2 marks)
- 1 mark for each explanation of why it meets the criteria (up to 2 marks)

SECTION C

Question 11a.

Sample response

Solid-state drives can be made smaller than hard disk drives, saving space inside the body of the RoboMojo unit. As SSDs have no moving parts, they are less susceptible to damage from movement, which is part of RoboMojo's main function.

Note: Other advantages include less noise and less power usage.

Mark allocation: 2 marks

- 1 mark for each advantage as long as they are an advantage of an SSD in regards to RoboMojo (up to 2 marks)

Question 11b.

Sample response

Bluetooth® requires less power than wi-fi and is simpler to use and install. RoboMojo has a limited power supply and so saving power is critical.

OR

Wi-fi has a greater range and communicates faster than Bluetooth®. Bluetooth® may not cover the entire floor plan of a larger house and RoboMojo could be out of range in the far corners.

Mark allocation: 2 marks

- 1 mark for a statement of advantage
- 1 mark for applying the advantage to the context

Question 12a.

Sample response

The photos could be intercepted over the internet if not transmitted securely and used for criminal activities – if someone is watching over a period of time, they could establish patterns to determine a time to break in to the house, or the camera could be used for unlawful surveillance.

Mark allocation: 1 mark

- 1 mark for any reasonable risk that references RoboMojo taking photographs
  Note: This risk must refer to the customer, not Bella and Scott.

Question 12b.

Sample response

Privacy Act 1988

Mark allocation: 1 mark

- 1 mark for the *Privacy Act 1988*
  Note: The name of the Act and the year must be correct.

Question 12c.

Sample response

Bella and Scott must ensure that photos are only used for the purpose outlined to the customer (to check on the progress of cleaning their own floors – no on-selling of images to third parties, for example) and that photos are protected by appropriate measures during transmission (e.g. encryption) and storage (e.g. protection by username and password).

Mark allocation: 2 marks

- 1 mark for each precaution; each precaution must have a reason related to the Act (privacy principles) and a process (something that Bella and Scott have to do) (up to 2 marks)

Tip

- *Legislation must be quoted by correct name and year. If you forget the year, look in the multiple-choice questions – there might be a question that lists the legislation years.*

SECTION C

Question 13

Sample response

The number of households reporting bugs has decreased from above 90% to below 10%. This implies that the RoboMojo code is reporting fewer errors and becoming more robust.

The percentage of floor space covered by the RoboMojo unit has increased from under 50% to just over 90%. This implies that the algorithm to clean the floors is becoming more accurate.

Mark allocation: 2 marks

- 1 mark for mentioning accuracy by floor space
- 1 mark for mentioning robustness by reducing number of bugs

Note: The number of households giving positive reviews has increased from just over 10% to just under 90%. While this is an increase, there's no direct link between the customer being happy and increased effectiveness in this case.

Note: Regarding the number of firmware updates, there is no consistent increase or decrease over the six weeks.

Tip

- *Even though this looks like a maths question, any exam can ask you to analyse a graph in the context of material you have covered for the subject. Look for increases and decreases, substantial changes or areas that really show something. For example, the number of firmware updates in this graph is really not telling us anything – you are better off using data that changes substantially.*

END OF SAMPLE RESPONSES