



Free Exam
for 2011-15 VCE study design



Units 3 and 4 IT: Applications

Practice Exam Solutions

Stop!

Don't look at these solutions until you have attempted the exam.

Any questions?

Check the Engage website for updated solutions, then email practiceexams@ee.org.au.

Section A – Multiple-choice questions

Question 1

The correct answer is C.

A Wireless Broadband network administered by a telecommunications company is the best example of a WAN.

Question 2

The correct answer is C.

A range check determines whether a piece of data is between an upper and lower bound.

Question 3

The correct answer is A.

The problem solving methodology is a sequence involving analysis, design, development and evaluation.

Question 4

The correct answer is C.

A Web Server is responsible for the transmission of web pages to a user's computer.

Question 5

The correct answer is B.

HTML with CSS is the format that can be opened by the largest number of devices since it is a non-proprietary standard that is endorsed by the W3C.

Question 6

The correct answer is D.

Claudia works at a Sydney hospital so the Health Records Act 2001 and Information Privacy Act 2000 aren't applicable. This situation is out of the scope of the Copyright Act 1968. The Privacy Act 1988 contains provisions for the safe storage of health data.

Question 7

The correct answer is B.

Deciding on new products to market or manufacture is a strategic decision, a complicated problem that relates to the long-term goals of an organisation, made by senior management.

Question 8

The correct answer is D.

A wiki is best suited to a collection of people looking to collaborate on a resource.

Question 9

The correct answer is C.

An online community's social protocols are non-technical constraints.

Question 10

The correct answer is A.

One student study many different subjects.

Question 11

The correct answer is C.

English has the SubjectID 01 so an effective query would have to find all instances of 01 in the ClassAllocation Table.

Question 12

The correct answer is B.

HasPaidFees is either Yes or No.

Question 13

The correct answer is A.

A foreign key is a field in one table that uniquely references a row in another table.

Question 14

The correct answer is A.

The Development stage includes the creation of the solution, validating to check for the reasonableness of data being input, testing whether the solution does what it was intended to do and writing documentation.

Question 15

The correct answer is C.

An organisational goal is a long-term aim that an organisation wishes to achieve.

Question 16

The correct answer is B.

A Manual allows a user to understand all aspects of a piece of software and Content sensitive help can provide specific instructions when needed.

Question 17

The correct answer is B.

Test data needs to test all aspects of the solution.

Question 18

The correct answer is A.

Authoring software allows users to create multimedia and web solutions without the need to write programming code.

Question 19

The correct answer is D.

A format is a method by which data can be represented. HTTPS is a protocol that controls the way in which a web page is delivered to a user, but not its contents or styling.

Question 20

The correct answer is C.

Biometric security uses measurable physical characteristics to authenticate users.

Section B – Short-answer questions

Question 1

A firewall helps to prevent unauthorised access by controlling the incoming and outgoing traffic to a company's network.

Question 2

Database reporting can help organisations make decisions as they are able to study trends in all aspects of their organisation, such as the long-term sales reports of a particular products.

Question 3a

Tim should use a combo box for the "Credit Card Type" field which contains the possible credit cards that a user is able to select. This enhances efficiency for users because they're able to fill in the form quicker – saving time, and with less keystrokes – saving effort.

Question 3b

The checkbox that says "Subscribe to Newsletter".

Question 3c

Proportion has been used to visually reflect the relative importance of different parts of the web page. The effectiveness of the form has been increased because proportion has improved the readability, clarity and usability of the site.

Question 3d

Supplying data online enhances efficiency because users are able to submit data at any time of the day and with less effort. Furthermore, companies can save on staff wages as data can be collected automatically. Effectiveness is enhanced because data can be submitted directly from the user to the company without the potential for handwriting or vocal transcription errors to occur.

Question 4a

An ethical dilemma.

Question 4b

One of the following:

- Privacy Act (1988)
 - use and Disclosure
 - transborder data flow
- Spam Act (2003)
 - unsolicited commercial electronic messages
 - must include information about the individual who authorised the message

Question 4c

Substantial fines exist for organisations who do not abide by the Privacy Act 1988 and/or the Spam Act 2003.

Question 4d

No, Bert should decline BitSeed's offer.

Question 4e

Bert has the ethical obligation to uphold his customer's privacy. Since he is also dealing with sensitive information, like their credit card information, he has an ethical duty to keep this information safe and secure.

Question 5a

Cloud Computing is a service provided by large Internet-based, specialised data centres that offers offsite storage, processing and computer resources to individuals and organisations. The services are shared, on-demand and usually simple to use.

Question 5b

Cloud computing requires a network connection in order to collaborate in real-time – there is a high likelihood that there won't be any internet access in parts of remote WA where they operate.

Question 5c

Any two of:

- Encrypting documents
- Mandating strong passwords
- Implementing a firewall
- Installing antivirus software on computers

Question 5d

Any two of:

- Biometric security
- Keeping the server in a locked room
- Installing bars on windows
- Security cameras

Question 6a

Database normalisation is the process of reducing redundancy in a relational database by arranging the fields and tables so that they comply with a series of 'normal forms'.

Question 6b

Normalisation helps improve a database's design by reducing the amount of repeated and redundant data, thus saving storage space and reducing the time it takes to perform queries.

Question 6c

The database column names should conform to a consistent naming structure – this makes it more clear and readable. For example, CamelCase.

Question 6d

Ensure that each field has a single piece of data in it. For example, the **Address** column should be split up into separate columns for the Suburb, Postcode, State, etc.

Question 6e

Ensure that all non-key fields in the table are dependent on the key. For example, creating a relational database with separate tables for customer data and transaction data.

Question 7a

Entity Relationship Diagram.

Question 7b

Attribute.

Question 7c

Relationship.

Question 7d

Entity.

Question 7e

Cardinality — whether the relationship is many-to-one/one-to-many, etc.

Question 7f

A one-to-many relationship is where one record in the first table is related to many records in the second table.

Question 7g

Use your judgement whether the described solution would generate the required information. As a guide, your answer should describe a validation technique, such as an input mask, that checks for the existence for one '@' symbol and at least one '.' dot character.

Question 8a

They would first have to restore the full backup from Sunday, then the incremental backup from Monday and then the incremental backup from Tuesday.

Question 8b

BackDown should delete the backups from their hard drives and then use specialised software to securely overwrite the drive.

Question 9a

Any two of:

- Mandating usernames and strong passwords
- Using HTTPS for all connections
- Requiring that spies login to a VPN before connecting

Question 9b

- Timing how long it takes, in seconds, to encrypt and decrypt a file.
- Determining how much money is spent on encryption software.
- Identifying how much effort a user goes through to encrypt a file, measured in the number of keystrokes and mouse movements.

Question 9c

ANSA can include a moderator in the chat room who can help enforce the organisation's rules by deleting rule-breaking posts.

Question 9d

Viruses and malware can be embedded in media from the internet and this poses a threat to ANSA's data.

Question 10

Use your judgement whether the described solution would generate the required information. As a guide, the mockup should have a title labelled 'Events' as well as links to the home page, Galleries, Wiki, About and Contact. The answer should refer to horizontally and vertically laid out text as well as an explanation of how orientation was employed in your mockup.

Question 11

Use your judgement whether the described solution would generate the required information. As a guide, the answer should refer to searching, sorting, arithmetic, conditionals, graphs, reporting, sorted and printed output.