

THE UNIVERSITY OF AUCKLAND

SUMMER SEMESTER, 2017

Campus: City

COMPUTER SCIENCE

An Introduction to Practical Computing

TEST

(Time Allowed: ONE hour)

DIRECTIONS

1. Compare the test version number on the Teleform sheet supplied with the version number in the top left corner of this page. If they do not match, ask the test supervisor for a new sheet.
2. Enter your name and Student ID (in pencil) on the Teleform sheet and shade in the corresponding bubbles underneath. Your name and Student Id should both be entered left aligned. If your name is longer than the number of boxes provided, truncate it.
3. Answer all questions on the Teleform answer sheet provided.
4. Use a dark pencil to shade in your answers in the multiple choice answer boxes on the Teleform sheet. Check that the question number on the sheet corresponds to the question number in this question book. If you spoil your sheet, ask the supervisor for a replacement.
5. Each question is worth 2.5 marks. There are 40 questions.
6. Calculators are NOT permitted.

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MULTIPLE CHOICE QUESTIONS

For each question, choose the best answer according to the information presented in lectures. Select your preferred answer on the Teleform answer sheet by shading in the appropriate box in pencil. There are 40 questions. Each question is worth 2.5 marks.

Question 1

[2.5 marks] Stephen is building a new tablet computer. To make his tablet thin and light, he needs to combine as many of the tablet's components as possible into a single component. Which one of the following components should Stephen use?

- (a) Random access memory (RAM).
- (b) Small form factor (SFF).
- (c) System on a chip (SoC).
- (d) Central processing unit (CPU).
- (e) AC/DC converter.

Question 2

[2.5 marks] Stephen wants to allow the user to store their files on the tablet. Which is the best component for Stephen to use in his tablet to provide this feature?

- (a) HDD.
- (b) RFID.
- (c) RAM.
- (d) RAID.
- (e) SSD.

Question 3

[2.5 marks] Which one of the following statements is TRUE?

- (a) In a RAID 1 configuration only one storage device is required.
- (b) The only way to measure a CPU's performance is to use its clock speed.
- (c) The memory hierarchy describes the trade-off between the access time and the cost of various kinds of memory.
- (d) An HDD will always wear out before an SSD.
- (e) RAM is a kind of non-volatile storage device.

Question 4

[2.5 marks] Which is the best prefix to use when measuring a family's monthly Internet usage?

- (a) MiB.
- (b) KB.
- (c) TB.
- (d) TiB.
- (e) GB.

Question 5

[2.5 marks] What is the result of $1011_2 + 1001_2$ in decimal form (hint: you may need to perform some binary/decimal conversions)?

- (a) 2012_{10}
- (b) 24_{10}
- (c) 20_{10}
- (d) 10_{10}
- (e) 29_{10}

Question 6

[2.5 marks] How many bits are in 3 bytes?

- (a) 6
- (b) 24
- (c) 12
- (d) 9
- (e) 30

Question 7

[2.5 marks] Jenny is writing an app. She wants users to have a chance to try the app before they purchase it. Which one of the following licence types should Jenny use for her app?

- (a) Non-profit licence.
- (b) Commercial licence.
- (c) Shareware.
- (d) Freeware.
- (e) None of the above.

Question 8

[2.5 marks] What does the Patents Act 2013 prevent New Zealand software companies from doing?

- (a) Patenting their software, with some narrow exceptions.
- (b) Patenting all software, without any exceptions.
- (c) Charging too much for their software.
- (d) Selling their software to customers from other countries.
- (e) Using copyright to protect their software.

Question 9

[2.5 marks] Which one of the following is NOT a valid file extension?

- (a) PDF
- (b) HTTP
- (c) MP3
- (d) HTML
- (e) DOCX

Question 10

[2.5 marks] Which one of the following statements is TRUE?

- (a) The Internet's design is similar to a circuit-switching network.
- (b) Sputnik was the name of the world's first computer network which was built by the Soviet Union.
- (c) ARPANET did not use satellite links because they were too expensive.
- (d) NSFNET is still used today as a testing ground for new Internet applications.
- (e) The Internet was originally designed as a packet-switching network.

Question 11

[2.5 marks] What was the main problem with IPv4?

- (a) IPv4 was incompatible with DNS.
- (b) There was no flow control feature in IPv4, meaning packets were dropped by the receiver.
- (c) IPv4 was unable to handle modern webpages because they contain a mix of text, images and video.
- (d) IPv4 did not have enough addresses for the devices connecting to the Internet.
- (e) None of the above.

Question 12

[2.5 marks] What would be the best protocol to use if you were designing a video streaming app?

- (a) HTTP.
- (b) DNS.
- (c) IMAP.
- (d) DSL.
- (e) UDP.

Question 13

[2.5 marks] Lisa is designing an application that makes it easier for New Zealand businesses to send marketing text messages. Which statute does Lisa's application need to comply with?

- (a) GNU Public Licence.
- (b) Unsolicited Electronic Messages Act 2007.
- (c) Harmful Digital Communications Act 2015.
- (d) Copyright Act 1994.
- (e) Patents Act 2013.

Question 14

[2.5 marks] Which one of the following features would you NOT find in an email client?

- (a) Encrypt message.
- (b) Add BCC recipient.
- (c) Delete message.
- (d) Connect to email server.
- (e) Reply to topic.

Question 15

[2.5 marks] How does an instant messaging service create a direct connection between the sender and recipient?

- (a) The server gives the sender a list of IP addresses, which includes the recipient's IP address.
- (b) The sender sends the message to the recipient's instant messaging address.
- (c) The sender needs to tag the recipient in the message.
- (d) The recipient decides whether or not to create a direct connection between themselves and the sender.
- (e) Instant messaging services do not create direct connections between the sender and recipient.

Question 16

[2.5 marks] Which of these statements about Wikipedia is FALSE?

- (a) Wikipedia is the world's biggest wiki.
- (b) Most pages in Wikipedia can be edited by anyone.
- (c) All Wikipedia articles are checked by a quality control team before they are published.
- (d) Wikipedia is funded by grants and public donations.
- (e) Pages that are frequently vandalized within Wikipedia are semi-protected.

Question 17

[2.5 marks] What would the following wiki markup look like when viewed in a web browser?

```
#'''Summer school'''  
#Semester 1
```

- (a) **1. Summer school**
2. Semester 1
- (b) **■ Summer school**
■ Semester 1
- (c) **1. Summer school**
2. Semester 1
- (d) **1. *Summer school***
2. Semester 1
- (e) None of the above.

Question 18

[2.5 marks] Which of the following websites could NOT be described as a microblogging platform?

- (a) Tumblr.
- (b) Twitter.
- (c) Instagram.
- (d) Blogger.
- (e) Pinterest.

Question 19

[2.5 marks] Looking at the following URL, what protocol is being used by this webpage?

`https://www.cs.auckland.ac.nz`

- (a) Synchronous Hypertext Transfer Protocol.
- (b) Hypertext Transfer Protocol Secure.
- (c) Wireless Website Writing protocol.
- (d) High Traffic Transport Protocol.
- (e) None of the above. Webpages don't use protocols.

Question 20

[2.5 marks] Which one of the following is a reason to use a cache?

- (a) Protects the web browser from being infected with malware.
- (b) Ensures children cannot access inappropriate content on the Internet.
- (c) Provides the user with more accurate search results.
- (d) Allows the user to stream movies without needing an Internet connection.
- (e) Enables recently visited webpages to be accessed faster.

Question 21

[2.5 marks] What is the purpose of hypermedia?

- (a) Allows content on the Internet to be delivered much faster.
- (b) Enables links to be made between any form of media.
- (c) This is a protocol that can deliver 3D and virtual reality content.
- (d) This term is used to describe any kind of media that is not text (e.g. images, video, sound).
- (e) Allows a computer to connect to the Internet.

Question 22

[2.5 marks] In Microsoft Word, which of the following cannot be controlled using styles?

- (a) Font.
- (b) Indentation.
- (c) Text colour.
- (d) Line spacing.
- (e) Page break.

Question 23

[2.5 marks] What is the ASCII translation for the English word “TYPE”?

- (a) 84 89 80 69
- (b) 52 57 48 37
- (c) 83 88 79 68
- (d) 116 121 112 101
- (e) None of the above.

Question 24

[2.5 marks] What is the key difference between Microsoft Word and LaTeX?

- (a) LaTeX can produce PDF documents but Microsoft Word cannot produce PDF documents.
- (b) Microsoft Word uses a GUI while LaTeX editors do not use a GUI.
- (c) Microsoft Word and LaTeX use different languages to typeset documents.
- (d) Microsoft Word is open source software but LaTeX is proprietary software.
- (e) Microsoft Word is a WYSIWYG application, while LaTeX is a non-WYSIWYG application.

Question 25

[2.5 marks] What was the ‘killer app’ on the Apple II?

- (a) Lotus 1-2-3.
- (b) Microsoft Office.
- (c) The Apple II’s GUI.
- (d) VisiCalc.
- (e) BASIC.

Question 26

[2.5 marks] The development of which component in the 1960s helped to make computers smaller, faster and more reliable?

- (a) Transistor.
- (b) RAM.
- (c) Electronic display.
- (d) Microprocessor.
- (e) Vacuum tube.

Question 27

[2.5 marks] Why did IBM lose its dominance in the personal computer market in the 1980s?

- (a) Microsoft Office was not compatible with IBM's computers.
- (b) IBM's computers were nowhere near as popular as the Apple Macintosh.
- (c) IBM computers suffered from an exploding battery problem.
- (d) IBM did not produce any PDAs.
- (e) IBM clones which ran MS-DOS competed with IBM's computers.

Question 28

[2.5 marks] What is the name of the Approved Agency under the Harmful Digital Communications Act 2015?

- (a) Child, Youth and Family.
- (b) NetSafe.
- (c) New Zealand Police.
- (d) Ministry of Justice.
- (e) InternetNZ.

Question 29

[2.5 marks] Which one of the following methods can be used to protect children from inappropriate content on the Internet?

- (a) Install blocking software that uses a blacklist of websites.
- (b) Use a peer-to-peer network to monitor the files downloaded onto the computer.
- (c) Only allow the child to browse the Internet from a mobile device such as a tablet or smartphone.
- (d) Require the child to use 'private mode' on their web browser.
- (e) None of the above.

Question 30

[2.5 marks] Which one of the following statements is FALSE?

- (a) A 12 year old child who is accompanied by his father cannot watch an R13 movie.
- (b) A copyright holder can use the Copyright Act 1994 to complain about a person who is sharing copyrighted material on the Internet.
- (c) Cloud storage provides an easy way of sharing files with other people.
- (d) Peer-to-peer networks require a central server in order to find other peers in the network.
- (e) Even if you delete a picture from a website, it could still be found in an archive or backup.

Question 31

[2.5 marks] Which of the following are game media?

- I Cartridges
- II Blu-Ray discs
- III Cassettes
- IV Steam downloads

- (a) I and II.
- (b) II and IV.
- (c) I, II and IV.
- (d) I, II and III.
- (e) All of them.

Question 32

[2.5 marks] Which of the following statements is FALSE?

- (a) Developers specialize in video game development.
- (b) Publishers do not develop video games.
- (c) Video game development is a multi-disciplinary process.
- (d) Publishers fund, market and distribute video games.
- (e) None of the above.

Question 33

[2.5 marks] Which of the following statements is TRUE?

- (a) Role playing games focus on ranged combat.
- (b) Platform games are primarily competitive.
- (c) Realistic sports games are commonly referred to as sims.
- (d) Light gun games are examples of fighting games.
- (e) None of the above.

Question 34

[2.5 marks] Which of the following is an example of ludonarrative dissonance?

- (a) A game about escaping a haunted house focusing on exploration and surviving encounters with ghosts.
- (b) A game about a likeable and kind-hearted thief focusing on gunplay and murdering hundreds of people.
- (c) A game about a racer's rise to success featuring realistic racing in a variety of real world vehicles.
- (d) A game about the horrors of war featuring brutal combat and survival mechanics.
- (e) None of the above.

Question 35

[2.5 marks] Which of the game elements below does the following definition best describe?

“Stories told by the developers to players through narrative and game mechanics.”

- (a) Interpreted narratives.
- (b) Narrative mechanics.
- (c) Emergent narratives.
- (d) Embedded narratives.
- (e) None of the above.

Question 36

[2.5 marks] Which of the following people were instrumental in the development of LaTeX?

- I Donald Knuth
- II Tim Berners-Lee
- III Leslie Lamport
- IV Ward Cunningham

- (a) I and III.
- (b) I, III and IV.
- (c) II and IV.
- (d) All of these people.
- (e) I, II and III.

Question 37

[2.5 marks] With respect to LaTeX, which of the following statements is FALSE?

- (a) A comma separated list of options can be placed within a single pair of square brackets.
- (b) Each argument needs its own pair of curly braces.
- (c) Options are placed after arguments.
- (d) Options are placed in square brackets.
- (e) Arguments are placed in curly braces.

Question 38

[2.5 marks] What would the output of the following LaTeX code be?

```
The \texttt{quick brown fox}
\begin{bfseries}
jumps over
\end{bfseries}
the \scshape lazy dog.
```

- (a) The quick brown fox **jumps over** the LAZY DOG.
- (b) The *quick brown fox* jumps over the lazy dog.
- (c) The quick brown fox jumps over the **lazy dog**.
- (d) The **quick brown fox** JUMPS OVER the *lazy dog*.
- (e) None of the above.

Question 39

[2.5 marks] With respect to LaTeX, which of the following statements is TRUE?

- (a) The LaTeX compiler takes into account all white space present in LaTeX code.
- (b) The `\title` command inserts the title of a document.
- (c) The table of contents needs to be manually generated.
- (d) The preamble is located between the document class command and the start of the document environment.
- (e) None of the above.

Question 40

[2.5 marks] What would be the output of the following LaTeX code?

```
\begin{displaymath}
\sin(x) = \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n+1}}{(2n+1)!}
\end{displaymath}
```

(a)
$$\sin(x) = \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n+1}}{(2n+1)!}$$

(b)
$$\sin(x) = \sum_{n=0}^{\infty} (-1)^n x^{2n+1} / (2n+1)!$$

(c)
$$\sin(x) = \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n+1}}{(2n+1)!}$$

(d)
$$\sin(x) = \sum_{n=0}^{\infty} (-1)^n x^{2n+1} / (2n+1)!$$

(e) None of the above.

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