

THE UNIVERSITY OF AUCKLAND

FIRST 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] Which of the following lists of computer components is ranked from fastest to slowest in terms of access time?

- (a) Optical drive, HDD, RAM, CPU cache.
- (b) CPU cache, SSD, RAM, HDD.
- (c) RAM, Optical drive, CPU cache, SSD.
- (d) CPU cache, RAM, SSD, Optical drive.
- (e) SSD, Optical drive, RAM, CPU cache.

Question 2

[2.5 marks] Which of the following components is NOT likely to be found in a system unit?

- (a) Motherboard.
- (b) CPU.
- (c) Keyboard.
- (d) SSD.
- (e) RAM.

Question 3

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

- (a) HDDs may experience a “head crash”.
- (b) SSDs are also known as volatile memory.
- (c) HDDs do not have any moving parts.
- (d) Computers usually have more primary memory than secondary memory.
- (e) RAID is also known as primary memory.

Question 4

[2.5 marks] What is non-volatile storage?

- (a) A storage medium that is classed as primary memory.
- (b) A storage medium that loses its contents when the supply of electricity is cut off.
- (c) A storage medium that only consists of electronic components.
- (d) A storage medium that retains its contents even after the supply of electricity has been turned off.
- (e) None of the above.

Question 5

[2.5 marks] What decimal number has the binary representation 1010?

- (a) 10
- (b) 3
- (c) 5
- (d) 20
- (e) 11

Question 6

[2.5 marks] Which of the following would be the biggest value?

- (a) 1 TiB.
- (b) 1 TB.
- (c) 1 PB.
- (d) 1000 GB.
- (e) 1 GiB.

Question 7

[2.5 marks] How many different numbers can we represent using 5 bits?

- (a) 10
- (b) 32
- (c) 64
- (d) 5
- (e) 10000

Question 8

[2.5 marks] Which of the following is the main purpose of file extensions?

- (a) To allow the operating system to determine the file format.
- (b) To allow the operating system to order files in a hierarchical folder structure.
- (c) To allow the user to see what the file is good for.
- (d) To allow the operating system to see which files can be compressed.
- (e) All of the above.

Question 9

[2.5 marks] Software that keeps reminding the user to purchase the full version is known as:

- (a) Freeware.
- (b) Nagware.
- (c) Open-source software.
- (d) Botherware.
- (e) Crippleware.

Question 10

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

- (a) Free software, as defined by Richard Stallman, can be freely copied.
- (b) Some proprietary software is free to download and use.
- (c) All software is automatically protected by software patent law.
- (d) All software is automatically protected by copyright law.
- (e) Shareware is not free software as defined by Richard Stallman.

Question 11

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

- (a) The GPL is a software licence for free software.
- (b) Free software can be freely copied.
- (c) Free software can be freely changed.
- (d) Freeware can always be freely modified.
- (e) Free software is open-source.

Question 12

[2.5 marks] What does TCP do?

- (a) Sends information unreliably, but faster than other protocols.
- (b) Creates a secure connection over which your credit card details can be safely sent.
- (c) Forms a continuous connection from a source machine to a destination machine.
- (d) Converts an IP address into a human-readable domain name.
- (e) Divides a message into packets, checks that they all arrive safely and combines the packets to recreate the original message.

Question 13

[2.5 marks] Which system translates human-readable names into IP addresses on the Internet?

- (a) TCP/IP.
- (b) ARPANET.
- (c) Domain Name System.
- (d) URL.
- (e) Internet Addressing Service.

Question 14

[2.5 marks] Why is the Internet more robust than traditional telephone networks?

- (a) The Internet is faster.
- (b) The Internet does not depend on individual nodes.
- (c) The Internet has one big central exchange node.
- (d) The Internet uses circuit switching.
- (e) The Internet has more nodes.

Question 15

[2.5 marks] Which of the following is a valid IPv4 address?

- (a) 189.365.250.2
- (b) 185.16.111.3.2
- (c) 174.16.254.1
- (d) 256.256.256
- (e) None of the above.

Question 16

[2.5 marks] Which protocol is used to send emails?

- (a) SMTP
- (b) ISP
- (c) IEEE
- (d) IMAP
- (e) POP3

Question 17

[2.5 marks] If you needed to encrypt your email, which of the following technology would you use?

- (a) ISP
- (b) PGP
- (c) HTTP
- (d) UDP
- (e) HTTPS

Question 18

[2.5 marks] Which email system downloads the email from the server to the local computer and then deletes it from the server?

- (a) DNS
- (b) IP
- (c) SMTP
- (d) IMAP
- (e) POP3

Question 19

[2.5 marks] Which of the following systems is asynchronous?

- (a) Forums.
- (b) Instant Messaging.
- (c) Video Conferencing.
- (d) Telephone.
- (e) None of the above.

Question 20

[2.5 marks] What Wiki markup would you use to create an external link that uses the label "Courses"? The URL of the page we wish to link to is:
<https://www.cs.auckland.ac.nz/courses/>

- (a) <https://www.cs.auckland.ac.nz/courses/> COMPSCI111
- (b) [[<https://www.cs.auckland.ac.nz/courses/> Courses]]
- (c) [<https://www.cs.auckland.ac.nz/courses/> Courses]
- (d) [<https://www.cs.auckland.ac.nz/courses/> | Courses]
- (e) None of the above.

Question 21

[2.5 marks] Who created the first wiki?

- (a) Ward Cunningham.
- (b) Larry Sanger.
- (c) Ted Nelson.
- (d) Tim Berners-Lee.
- (e) Vannevar Bush.

Question 22

[2.5 marks] Which of the following characters would you use to create an ordered list using Wiki markup?

- (a) ‘
- (b) \$
- (c) #
- (d) *
- (e) /

Question 23

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

- (a) Wikipedia uses PageRank to check the validity of the information on a wiki page.
- (b) Wikipedia is a free online encyclopedia that aims to allow anyone to edit articles.
- (c) Wikipedia runs on the MediaWiki software platform.
- (d) Wikipedia is funded by grants and public donations.
- (e) Wikipedia uses the ClueBot NG bot to automatically detect and revert vandalism.

Question 24

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

- (a) A cache speeds up web page access by storing local copies of resources.
- (b) The WWW was originally designed to allow researchers to share information.
- (c) Tim Berners-Lee developed the WWW at CERN.
- (d) When you view a web page, the web server can record your IP address.
- (e) The WWW is a network of networks that first started with four computer nodes.

Question 25

[2.5 marks] What does PageRank do?

- (a) It tells us how many users have been on a web page.
- (b) It measures the importance of web pages by looking at links.
- (c) It records what web browsers do in the WWW.
- (d) It sorts web servers by their IP addresses.
- (e) It counts the number of web pages on a web site.

Question 26

[2.5 marks] Which of the following lists has events in the correct chronological order (from earliest to most recent)?

- (a) Internet Explorer created, WWW created, Mosaic created, Netscape became open-source.
- (b) Hypertext defined, MEMEX described, Netscape became open-source, WWW created.
- (c) MEMEX described, Hypertext defined, Mosaic created, Netscape became open-source.
- (d) WWW created, Hypertext defined, MEMEX described, Mosaic created.
- (e) None of the above.

Question 27

[2.5 marks] Which of the following is a communications protocol for peer-to-peer file sharing?

- (a) HTTP.
- (b) FTP.
- (c) UDP.
- (d) IMAP.
- (e) BitTorrent.

Question 28

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

- (a) Tor is also known as "The Onion Router".
- (b) Tor is only available to people working in the Central Intelligence Agency.
- (c) Tor obscures the path that packets take when moving from sender to receiver.
- (d) Tor is software for enabling anonymous communication.
- (e) Tor makes it more difficult for Internet activity to be traced back to the user.

Question 29

[2.5 marks] A piece of code deliberately inserted into a program that sets off a malicious function when a certain condition is met is known as a:

- (a) Worm.
- (b) Trojan.
- (c) Zombie.
- (d) Logic bomb.
- (e) Virus.

Question 30

[2.5 marks] What is the main drawback of the Do Not Track initiative?

- (a) It is a mandatory system that forces companies to have their computer servers upgraded to cope with the Do Not Track request.
- (b) It is a mandatory system for the United States and Canada.
- (c) It is a voluntary system and the advertisers are under no obligation to honour the request.
- (d) It is a voluntary system for the majority of the world except Europe where it is enforced.
- (e) None of the above.

Question 31

[2.5 marks] What is the ASCII representation of the word 'CAT'?

- (a) 99 97 116
- (b) 32 44 99
- (c) 66 64 83
- (d) 67 65 84
- (e) 100 98 117

Question 32

[2.5 marks] What does ASCII encoding do?

- (a) It encodes colour, which is necessary for all modern computers to work.
- (b) It encodes characters in the form of numerical representation, and computers store numeric values.
- (c) It is an encoding system using 4 bits, which is sufficient to represent all possible characters.
- (d) It is an encoding system used to represent file formats.
- (e) None of the above.

Question 33

[2.5 marks] Which of the following is classified as a text editor?

- (a) Microsoft Word.
- (b) GIMP.
- (c) Microsoft Excel.
- (d) Notepad.
- (e) None of the above.

Question 34

[2.5 marks] Which of the following statements about PowerPoint presentation design is TRUE?

- (a) Use a different colour for each point.
- (b) Make use of animation as much as possible.
- (c) Use complicated fonts to attract the reader's attention.
- (d) Use raw data over graphs.
- (e) Avoid wordiness: use key words and phrases only.

Question 35

[2.5 marks] Which of the following combinations of design features is advised for good web page design?

- (a) High Definition scale image \ Flash animations \ Frames.
- (b) Small size image \ JPEG file format for photos \ Frames.
- (c) Small size image \ JPEG file format for photos \ Simple background.
- (d) Heavy use of colour \ Small font for long text \ Centred text.
- (e) High Definition scale image \ Flash animations \ Simple background.

Question 36

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

```
\begin{verbatim} This is a verbatim \\\LARGE{test}
\end{verbatim}
```

- (a) This is a verbatim \\\LARGE{test}
- (b) This is a verbatim TEST
- (c) This a verbatim
 \LARGE{test}
- (d) This is a verbatim
 TEST
- (e) This is a verbatim \\\TEST

Question 37

[2.5 marks] Which LaTeX command will generate bold text styles?

- (a) `\bftext`
- (b) `\textbold`
- (c) `\boldtext`
- (d) `\textbf`
- (e) `\textit`

Question 38

[2.5 marks] Which of the following LaTeX mathematical commands will generate the following formula?

$$\sum_{i=0}^p \frac{k_i}{i}$$

- (a) `\sum_{i=0}^p \frac{i}{k_i}`
- (b) `\sum_{i=0}^p \frac{i}{k^i}`
- (c) `\sum_{i=0}^p \frac{k_i}{i}`
- (d) `\sum_{i=0}^p \frac{k^i}{i}`
- (e) `\sum_{i=0}^p \frac{k_i, i}`

Question 39

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

```
\documentclass[a4paper]{report}
\begin{document}
$\sum_{i=0}^p a_{2}^n$
\end{document}
```

- (a) $\sum_{i=0}^p a_2^n$
- (b) $\sum_{i=0}^p a_{2^n}$
- (c) $\sum_0^p a_2^n$
- (d) $\sum_{i=0}^{i=p} a_2^n$
- (e) $\sum_0^p a_{2^n}$

Question 40

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

```
\begin{enumerate}  
\item Apple  
\item Pen  
\setcounter{enumi}{0}  
\item Apple-pen  
\end{enumerate}
```

- (a) 1. Apple
2. Pen
3. Apple-pen
 - (b) 1. Apple
2. Pen
1. Apple-pen
 - (c) 0. Apple
1. Pen
2. Apple-pen
 - (d) 1. Apple
0. Pen
1. Apple-pen
 - (e) 1. Apple
2. Pen
0. Apple-pen
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