THE UNIVERSITY OF AUCKLAND

FIRST SEMESTER, 2018
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 expected to have exactly 1 (one) correct answer. If you believe that a question has either NO answer or MULTIPLE correct answers, select the ONE you believe is most likely to be the intended answer.

6. Each question is worth 2.5 marks. There are 40 questions.

7. 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] Consider the following computer specifications:

Dell tower case
Intel Core i5-7500 Processor Quad Core 6 MB CPU cache 3.4GHz
8 GB DDR4 RAM
Samsung 128 GB SSD
8x DVD+/-RW 9.5mm Optical Disk Drive
Radeon HD 5450 512 MB PCI Express Graphics Card
Microsoft Windows 10 64-bit

Which of the following statements is FALSE?

    (a) The computer comes with an operating system installed.
    (b) The computer has at least 8 GB of primary memory.
    (c) The computer lacks a motherboard.
    (d) The computer has 2 secondary storage devices.
    (e) The computer has a 4 core CPU.

Question 2
[2.5 marks] If a task takes a computer 160 minutes to perform in 2010, according to Moore's Law as taught in the lectures, approximately how long would it take a similarly priced computer to perform the same task in 2016?

    (a) 10 minutes.
    (b) 1 minute.
    (c) 30 seconds.
    (d) 10 seconds.
    (e) 15 minutes.

Question 3

[2.5 marks] A $1000 computer in year xxxx takes around 48 minutes to do a task.   A $1000 computer in 2019 takes around 12 minutes to do the same task. What year is xxxx according to Moore's Law as taught in the lectures?

  (a) 2010.
  (b) 2014.
  (c) 2008.
  (d) 2016.
  (e) 2015.

Question 4

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

  (a) Primary memory retains data without needing a supply of electricity.
  (b) A sound card is an example of an expansion card.
  (c) SSDs can wear out faster than HDDs.
  (d) RAID 10 configuration provides redundancy and faster reading/writing of data.
  (e) SSDs have no mechanical parts and operate silently.

Question 5

[2.5 marks] Which of the following are output devices?

I.   Touchscreen
II. Speaker
III. Printer
IV. Projector

  (a) II, III, and IV.
  (b) I, II, III, and IV.
  (c) I, III, and IV.
  (d) I, II, and III.
  (e) I and II.

Question 6

[2.5 marks] What is the binary equivalent of the decimal number 104?

  (a) 1001000
  (b) 1101010
  (c) 1101001
  (d) 1101000
  (e) 1111000

Question 7

[2.5 marks] What is the decimal equivalent of the binary number 101100?

(a) 100
(b) 77
(c) 44
(d) 24
(e) 104

Question 8

[2.5 marks] Which of the following sequences is arranged in descending order of memory capacity (i.e., from the largest memory capacity to the smallest)?

(a) 2 KiB, 2 KB, 2 GB, 2 GiB, 2 MiB
(b) 2 KB, 2 KiB, 2 GiB, 2 GB, 2 MiB
(c) 2 GB, 2 GiB, 2 MiB, 2 KiB, 2 KB
(d) 2 MiB, 2 KiB, 2 GiB, 2 GB, 2 KB
(e) 2 GiB, 2 GB, 2 MiB, 2 KiB, 2KB

Question 9

[2.5 marks] If we want to represent 18 different values, how many bits would we need?

(a) 1 bit
(b) 3 bits
(c) 5 bits
(d) 6 bits
(e) 4 bits

Question 10

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

(a) Analogue information is discrete.
(b) Decimal prefixes and binary prefixes are used for counting large numbers of bytes.
(c) A bit is the smallest unit of information that can be stored or manipulated on a computer.
(d) Bits are usually assembled into a group of eight to form a byte.
(e) Storing real-world information digitally results in loss of information.

Question 11

[2.5 marks] Which of the following would be classified as system software?

I.   Ubuntu 17 (Linux distribution)
II. Disk Cleanup for Windows 10
III. Apple iOS 11
IV. Mozilla Firefox 57
V.   Snapchat 10 for Android

    (a) I, III, IV, and V.

    (b) I, II, III, IV, and V.

    (c) I, II, and III.

    (d) II, III, IV, and V.

    (e) IV and V.

Question 12

[2.5 marks] Which of the following statements about file formats and extensions is FALSE?

    (a) File extensions are typically used by the operating system to determine a file's format.

    (b) File formats only use proprietary standards for security reasons.

    (c) A proprietary file format standard is a standard owned by a company or individual.

    (d) A file format standard is an agreed-upon way of using binary values to encode data.

    (e) A file extension typically consists of a dot followed by characters occurring at the end of a file name.

Question 13

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

    (a) In New Zealand, you can be granted a patent for any piece of software that you develop.

    (b) GIMP is an example of an open source image editing program.

    (c) With most open source software you can modify the source code and create a new version.

    (d) Copyright legally protects proprietary software from being copied by a person without the owner's permission.

    (e) All open source software is free to use.

Question 14

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

    (a) A GUI lets a user perform tasks by interacting with graphical elements.

    (b) A GUI is always the better option rather than a CLI as it is easier to use.

    (c) Keyboard shortcuts can be used to make a GUI more efficient.

    (d) With a CLI, a user enters text commands at a prompt.

    (e) In the case of CLIs, a user can combine commands to complete tasks quickly.

Question 15

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

    (a) End systems sit at the network edge of the Internet.

    (b) Most servers reside in large data centres.

    (c) Routers direct traffic around the network and connect networks together.

    (d) Internet applications run on packet switches or routers.

    (e) Switches connect multiple devices to the same network.

Question 16

[2.5 marks] Which of the following statements about packet-switched networks are TRUE?

I.   Packets always take the same route from the sender to the receiver.

II. The Internet is a packet-switched network.

III. Packets may arrive out of order at the receiver.

IV. Messages are broken down into packets.

    (a) I, II, and III.

    (b) II, III, IV.

    (c) I and III.

    (d) II and IV.

    (e) I and II.

Question 17

[2.5 marks] Which of the following is NOT a valid IP Version 4 address?

    (a) 126.167.199.2

    (b) 0.0.0.0

    (c) 232.196.10.11

    (d) 130.217.1.0

    (e) 172.200.256.1

Question 18

[2.5 marks] An IP Version 6 address is how many bits long?

    (a) 32

    (b) 256

    (c) 128

    (d) 16

    (e) 64

Question 19
[2.5 marks] Which of the following statements about Internet protocols is FALSE?

   (a) Open Internet protocol definitions are defined in documents called RFCs.
   (b) IP is used to route packets from the sender to the receiver.
   (c) Every packet will have the source IP address and the destination IP address.
   (d) TCP stands for transmission control protocol.
   (e) UDP offers flow control and error detection.

Question 20
[2.5 marks] Suppose a user wants to visit a website with a hostname cnn.com. The hostname
has an IP address of 157.166.226.26. If the client types the hostname cnn.com into the
address bar of the browser, which service does the browser utilize to connect to the host
before a request can be made?

   (a) TCP.
   (b) IP.
   (c) IMAP.
   (d) DNS.
   (e) FTP.

Question 21
[2.5 marks] Which protocol is used to send emails?

   (a) POP3.
   (b) SMTP.
   (c) HTTP.
   (d) TCP.
   (e) IMAP.

Question 22
[2.5 marks] Who created the World Wide Web?

   (a) Tim Berners-Lee.
   (b) Ward Cunningham.
   (c) Steve Jobs.
   (d) Jeff Bezos.
   (e) Larry Page.

Question 23

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

(a) Email can be secured using encryption technology such as PGP.
(b) IMAP allows the organizing of email messages into folders.
(c) IMAP downloads email messages and deletes them from the mail server.
(d) An email consists of two parts: a header and a message body.
(e) Users specified in the Bcc: field will get email and see the recipients in the To: and Cc: fields.

Question 24

[2.5 marks] Which of the following is an example of synchronous communication?

(a) Email sent using Gmail.
(b) A blog post using WordPress .
(c) A Tweet using Twitter .
(d) Messages sent using WhatsApp Messenger.
(e) A Facebook post.

Question 25

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

(a) Blog posts are normally displayed in reverse chronological order.
(b) Blogs are double-blind peer-reviewed to ensure high-quality content.
(c) Blogs are objective.
(d) Blog entries are indexed automatically, so you always know the topic of the blog.
(e) Blogs can only contain plain text but can link to images hosted elsewhere.

Question 26

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

(a) Wikipedia is funded by grants and public donations.
(b) Wikipedia runs on the MediaWiki software.
(c) Wikipedia only uses manual methods to address vandalism.
(d) Wikipedia was launched by Jimmy Wales and Larry Sanger.
(e) Wikipedia articles on academic topics are more accurate than articles on pop culture and politics.

Question 27

[2.5 marks] What character is used to create an ordered list in Wiki markup?

    (a) &

    (b) *

    (c) %

    (d) #

    (e) $

Question 28

[2.5 marks] Which of the following is used to create a link to another Wiki page and also assign a label for that link?

    (a) `[[ name of page || label ]]`

    (b) `name of page label`

    (c) `[[name of page | label]]`

    (d) `name of page | label`

    (e) `[name of page label]`

Question 29

[2.5 marks] Given the URL:
https://www.cs.auckland.ac.nz/courses/compsci111s1c/exams/
Which of the following statements is FALSE?

    (a) https stands for hypertext transfer protocol standard.

    (b) /courses/compsci111s1c/exams/ is the path on the server.

    (c) index.html is the resource.

    (d) URL stands for uniform resource locator.

    (e) www.cs.auckland.ac.nz is the domain.

Question 30

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

    (a) Search engine algorithms are a trade secret.

    (b) Big search engines now provide personalized search results leading to the phenomenon of a filter bubble.

    (c) Local laws and advertising have no impact on the search results displayed to the users.

    (d) A search engine works by using programs called spiders to index the WWW.

    (e) Search engines gather a lot of information about their users (e.g., location, browser information).

Question 31

[2.5 marks] Which of the following types of malware does NOT need a host program to run or spread?

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

Question 32

[2.5 marks] Which of the following statements about peer-to-peer (P2P) networks are TRUE?

I. P2P networks utilize client-server architecture.
II. File sharing on P2P networks can infringe on copyright laws.
III. The BitTorrent protocol functions by breaking a file into pieces, and peers upload and/or download multiple pieces at the same time.
IV. P2P networks are part of the WWW.

    (a) IV.
    (b) I, II, III, and IV.
    (c) II, III, and IV.
    (d) II and III.
    (e) II and IV.

Question 33

[2.5 marks] What is the ASCII encoding of the word "WYSIWYG"?

    (a) 87 121 115 105 119 121 103
    (b) 87 89 83 73 87 89 71
    (c) 87 89 83 73 87 89 71 103
    (d) 119 121 115 105 119 121 103
    (e) 119 89 83 73 87 89 71

Question 34

[2.5 marks] What word does the ASCII code "112 97 105 108" represent?

    (a) male
    (b) sale
    (c) pale
    (d) pail
    (e) mail

Question 35

[2.5 marks] If you had the word "DOG" stored on the computer, how would it actually be stored?

    (a) 100 111 103
    (b) 1000100 1001111 1000111
    (c) 68 111 103
    (d) 100 79 71
    (e) 68 79 71

Question 36

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

    (a) Both page breaks and next page section breaks move the rest of the text to the next page of the document.
    (b) Header content is found in the top margin of every page.
    (c) Endnote text appears at the end of the document.
    (d) Footer content is found in the bottom margin of every page.
    (e) Footnote content is found in the bottom margin of every page.

Question 37

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

    (a) Checking is the repeated accessing of your digital device interrupting your current activity.
    (b) Depression may be transmittable through technological interaction.
    (c) A 2009 study showed US college students scored substantially lower on the Narcissism Personality Inventory than their cohort 20 years ago.
    (d) Always online digital devices have raised the expectation for immediate gratification.
    (e) Digital devices are "cognitively penetrating" meaning they are highly pervasive and are demanding of our attention.

Question 38

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

    (a) Visual cues are an important part of face-to-face communication.
    (b) A 2014 study of 105 U.S. children showed 5 days with only face-to-face communication did not significantly change the recognition of nonverbal emotional cues.
    (c) A 2012 study of 777 students at 6 U.S. universities found that, on average, a student used a digital device for non-class purposes 11 times during a typical school day.
    (d) Visual cues include facial expression, eye contact, tone of voice, posture, and spatial distance.
    (e) Increased interaction with technology has negatively affected face-to-face communication skills.

Question 39

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

(a) A 2005–2006 study reported that 19.5% of American adolescents aged 12 to 19 suffered from hearing loss, which is an increase of 33% from that reported in 1988–1994.

(b) Some of the increase in hearing loss among American adolescents may be attributable to headphone/earbud usage.

(c) If other people can hear the music you are listening to wearing headphones or earbuds, it is most probably too loud.

(d) Moderate noise on a regular basis cannot lead to hearing loss.

(e) Listening to media through headphones or earbuds for prolonged periods of time at high volume can cause permanent hearing loss.

Question 40

[2.5 marks] Which of the following statements regarding Occupational Overuse Syndrome (OOS) is FALSE?

(a) To avoid Occupational Overuse Syndrome you need a properly designed workspace, there is little an individual can do on their own to prevent it.

(b) With Occupational Overuse Syndrome, pain may eventually become constant and associated with loss of muscle strength and sleep disturbances.

(c) Stop activity when discomfort is felt.

(d) Occupational Overuse Syndrome(OOS) is also known as Repetitive Strain Injury (RSI).

(e) To avoid OOS, take regular breaks and avoid prolonged repetitive movement or activity.