

Choose the **best** answer. There are no additional penalties for wrong v. blank answers, so you should answer all questions, even if unsure. Be sure to enter your last name first and be careful when bubbling in.

1) With regards to "packet switching," which of the following is FALSE?

- A) A single, direct connection ensures that the data never uses multiple paths
- B) Removing one node is unlikely to take down the whole system
- C) It permits the use of relatively "dumb" nodes
- D) Data is divided into discrete chunks

2) In class, it was argued that the mouse may have actually been a bad idea in computing. Which of the following is the best explanation of that idea?

- A) The one button mac mouse vs the two button PC mouse creates too much confusion to be useful.
- B) The mouse focuses on "primitive" gesturing, as opposed to human language for communication.
- C) The mouse idea was stolen from Xerox, and piracy never advances technology.
- D) The inherent superiority of mouse-using PC gamers causes resentment for console gamers and their work machines.

3) The Turing TEST suggests "artificial intelligence" is achieved when a computer can

- A) convincingly pretend to be human
- B) defeat a human in Chess
- C) accurately translate a human language
- D) operate via recursive code

4) The U's in both GNU and Linux represent the first letter of the word ____

- A) User
- B) Usenet
- C) Unix
- D) Nothing, because of recursion

5) It can fairly be said that _____ was the inventor of the Internet, which was first called ____

- A) The Department of Defense; ARPANET
- B) AT&T; EFNET
- C) Atlantic Bell; BELLNET
- D) Al Gore; AlgorithmicNet

6) Which of the following did NOT contribute to Microsoft's early successes?

- A) Windows running on a greater diversity of machines than its IBM-based competitor
- B) The relative interoperability of Windows' Office programs
- C) Bill Gates' high prioritization of the internet
- D) A familiar WIMP interface, arguably stolen from Xerox

7) "Turing COMPLETENESS" suggests that which of the following is FALSE?

- A) High level computational tasks are impossible without complex languages.
- B) With a only a small number of possible operations, you can get a computer to do complex things.
- C) Anything that can be done in one computer language can probably be done in another.
- D) Highly specialized programs (like Excel) might still be very versatile and Turing Complete.

8) "Sudo" stands for

- A) Super User Do
- B) Sub User Do
- C) Standard User Do
- D) Second User Do

9) What Arabic number, (not expressible in Roman numerals and a surprisingly recent invention) makes "place value" possible?

- A) 0
- B) 1
- C) 10
- D) 16

10) Who is credited with writing the first "program" (despite having no computer to run it on?)

- A) Richard Stallman
- B) Alan Turing
- C) Charles Babbage
- D) Ada Lovelace

11) A truly safe website will never send you your password because, thanks to hashing, ____

- A) It would take a long time to decrypt.
- B) The site is anonymous.
- C) Your email is a point of failure.
- D) They do not actually know it.

12) What's the BEST "generalized" explanation of the ticker-tape theme?

- A) Financial data should be prioritized over other forms of data
- B) Advances in new technology always create environmental waste
- C) Technologists frequently focus on data transfer instead of human communication
- D) There is fundamentally no difference between paper and screen display of data

13) Regarding "recursion," which of the following is FALSE?

- A) You are defining something with itself when you use it.
- B) The L in Linux stands for "Linux," as a humorous reference to it.
- C) Because it is by definition paradoxical, it is considered problematic in IT.
- D) It is a commonly used programming strategy.

14) "Software is a PRODUCT" was the revolutionary (and arguably harmful) idea expressed in Bill Gates' (in)famous 1976 "Letter to ____"

- A) Developers
- B) Hobbyists
- C) Hackers
- D) Scripters

15) What does RAM stand for?

- A) Read Average Memory
- B) Random Access Memory
- C) Reticulated Anonized Memory
- D) Reverse Advance Memory

16) Most operating systems that are NOT _____ are practically descendants of Unix.

- A) Gnu
- B) Linux
- C) Windows
- D) Mac Os X

17) What numerical concept did the legend of Paal Paysam illustrate?

- A) The game of Chess is resistant to AI because there are too many possible moves
- B) Binary is not enough to express complex ideas
- C) Simply doubling an amount repeatedly causes large increases very quickly
- D) The greater efficiency of Arabic vs. Roman numerals

18) Which of the following is NOT associated with "using only text to interact with a computer?"

- A) Command Line Interface
- B) Graphical User Interface
- C) Terminal
- D) Shell Scripting

19) With regards to "10", which of the following is FALSE?

- A) In decimal, most people have "10" fingers.
- B) In binary, most people have "10" legs.
- C) In hexadecimal, there are exactly "10" months per year.
- D) "10" can theoretically mean any whole number greater than one, depending on the base system.

20) Which of the following best describes the most important technological advance that ARPANET represented?

- A) Using real-time chat capability as opposed to asynchronous email
- B) Using a peer-to-peer (as opposed to a centralized) network to increase stability and reliability
- C) Using a fiber-based network to increase bandwidth
- D) Using wireless transmissions to increase signal propagation distance

21) With regards to "packet switching," which of the following is FALSE?

- A) It permits the use of relatively "dumb" nodes
- B) Removing one node is unlikely to take down the whole system
- C) Requiring a direct connection ensures that the data never uses multiple paths
- D) Data is divided into discrete chunks

22) The word "Linux" most precisely corresponds to the "kernel" of an operating system. The kernel is most analogous to the _____ of a car.

- A) brakes
- B) engine
- C) dashboard
- D) body

23) Which of the following does NOT work by means of a rotating disc and a moving part that reads it?

- A) Vinyl Record
- B) CD-Rom
- C) Traditional Hard Drive
- D) Solid State Drive

24) The professor used a "milkshake" metaphor to discuss certain computer-based processes. What was he trying to express?

- A) Good encryption uses a mix of different programming languages
- B) The difficulty, or impossibility, of "reversing" certain processes, like hashing or encryption.
- C) It is easier to consume (read) data after it has been hashed.
- D) Skilled cryptologists could teach you decryption, but they would have to charge.

25) Why might an encryption program most likely ask you to wiggle your mouse around?

- A) To prevent the computer from sleeping
- B) To help generate truly random numbers
- C) To refresh the screen
- D) To play a joke on the user

26) Aside from brute-forcing (aka, just trying primes one after another) what is currently the quickest way to factor a large composite number?

- A) Quantum tabling
- B) Hash reduction
- C) Checksumming
- D) As far as we know, there isn't one.

27) What other valuable technology can be said to be the technical flipside or inverse of public key encryption?

- A) Digital Signatures
- B) Virus Manipulation
- C) Reverse Mining
- D) Shell Scripting

28) Bitcoin is all of the following EXCEPT

- A) Older than money itself
- B) A tradeable digital currency that can be "mined"
- C) A decentralized verifiable list of transactions
- D) Fundamentally based on the concept of "hashing"

29) Hashed passwords can be made even more secure by adding

- A) "Salt"
- B) "Soda"
- C) "Soup"
- D) "Koala"

30) Which best expresses the professor's view on the "Flat vs. Skeuomorphic" design debate?

- A) Flat design is superior because because it is a cleaner interface
- B) Skeuomorphic design is superior because it gives the user cues on how to operate it
- C) Regardless of which is chosen, it must be consistent across systems
- D) It is absurd that users frequently are not permitted to choose for themselves