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Name:_____ Class:_____ Date:_____

Chapter 1 Introduction

1. Computer science focuses on a broad set of interrelated ideas.
   a. True
   b. False

ANSWER: True

2. Informally, a computing agent is like a recipe.
   a. True
   b. False

ANSWER: False

3. An algorithm describes a process that ends with a solution to a problem.
   a. True
   b. False

ANSWER: True

4. Each individual instruction in an algorithm is well-defined.
   a. True
   b. False

ANSWER: False

5. An algorithm describes a process that may or may not halt after arriving at a solution to a problem.
   a. True
   b. False

ANSWER: False

6. An algorithm solves a general class of problems.
   a. True
   b. False

ANSWER: True

7. The algorithms that describe information processing can also be represented as information.
   a. True
   b. False

ANSWER: True

8. When using a computer, human users primarily interact with the memory.
   a. True
   b. False

ANSWER: False

9. In computer memory, information is stored as patterns of bytes (1s and 0s).
   a. True
   b. False

ANSWER: False

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Chapter 1 Introduction

10. The part of a computer that is responsible for processing data is the central processing unit (CPU).
    a. True
    b. False

ANSWER: True

11. Magnetic storage media, such as tapes and hard disks, allow bit patterns to be stored as patterns on a magnetic field.
    a. True
    b. False

ANSWER: True

12. A program stored in computer memory must be represented in binary digits, which is also known as ASCII code.
    a. True
    b. False

ANSWER: False

13. The most important example of system software is a computer's operating system.
    a. True
    b. False

ANSWER: True

14. An important part of any operating system is its file system, which allows human users to organize their data and programs in permanent storage.
    a. True
    b. False

ANSWER: True

15. A programmer typically starts by writing high-level language statements in a text editor.
    a. True
    b. False

ANSWER: True

16. Ancient mathematicians developed the first algorithms.
    a. True
    b. False

ANSWER: True

17. In the 1930s, the mathematician Blaise Pascal explored the theoretical foundations and limits of algorithms and computation.
    a. True
    b. False

ANSWER: False

18. The people known as “computers” working on cryptanalysis and ballistics calculations during World War II were primarily men highly skilled in mathematics and puzzle solving.
    a. True

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b. False

ANSWER: False

19. The first electronic digital computers, sometimes called mainframe computers, consisted of vacuum tubes, wires, and plugs, and filled entire rooms.

a. True

b. False

ANSWER: True

20. In the early 1940s, computer scientists realized that a symbolic notation could be used instead of machine code, and the first assembly languages appeared.

a. True

b. False

ANSWER: False

21. The development of the transistor in the early 1960s allowed computer engineers to build ever smaller, faster, and less expensive computer hardware components.

a. True

b. False

ANSWER: False

22. Moore's Law states that the processing speed and storage capacity of hardware will increase, and its cost will decrease, by approximately a factor of 3 every 18 months.

a. True

b. False

ANSWER: False

23. Gordon Moore coined the term *software engineering*.

a. True

b. False

ANSWER: False

24. In the 1960s, batch processing sometimes caused a programmer to wait days for results, including error messages.

a. True

b. False

ANSWER: True

25. In 1984, Apple Computer brought forth the Macintosh, the first successful mass-produced personal computer with a graphical user interface.

a. True

b. False

ANSWER: True

26. By the mid-1980s, the ARPANET had grown into what we now call the Internet, connecting computers owned by large institutions, small organizations, and individuals all over the world.

a. True

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b. False

ANSWER: True

27. In Python, the programmer can force the output of a value by using the `cout` statement.
    a. True
    b. False

ANSWER: False

28. How is data stored within a computer's memory?
    a. It is stored as hexadecimal data.
    b. It is stored as octal data.
    c. It is stored as binary data.
    d. It is stored in plain text data.

ANSWER: c

29. In a computer, what component is known as the "processor"?
    a. RAM
    b. CPU
    c. basic input/output devices
    d. motherboard

ANSWER: b

30. A flash memory stick is an example of what type of storage media?
    a. magnetic storage media
    b. optical storage media
    c. electrical storage media
    d. semiconductor storage media

ANSWER: d

31. What program is used by a programmer to convert high-level code into executable code?
    a. translator
    b. run-time system
    c. interpreter
    d. text editor

ANSWER: a

32. What problem was the Atanasoff-Berry Computer designed to solve?
    a. the automatic creation of ballistics tables for the U.S. military
    b. the interpretation of coded transmissions used by Germany in WWII
    c. the solving of systems of simultaneous linear equations
    d. the calculation of maritime navigation routes for the U.S. Navy

ANSWER: c

33. Who is credited as having created the World Wide Web in 1992?

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a. Steve Jobs
b. Albert Gore
c. Tim Berners-Lee
d. Paul Allen

ANSWER: c

34. Which term refers to the modern technology in which practically any physical objects containing the appropriate computer chips can send and receive digital information?
a. ARPANET
b. digital cloud
c. virtual reality
d. Internet of Things

ANSWER: d

35. What kind of programming language is Python?
a. an interpreted language
b. a compiled language
c. an interpolated language
d. a manufactured language

ANSWER: a

36. What is the name used for the integrated program development environment that comes with a Python installation?
a. Eclipse
b. IDLE
c. PyShell
d. PyDDL

ANSWER: b

37. Suppose you are viewing a screen displaying an active IDLE session. What does green text mean?
a. The text is the result of output or is the name of a function.
b. The text represents a string.
c. The text is a built-in function name.
d. The text indicates a variable's name.

ANSWER: b

38. What built-in function should you use in Python to prompt a user for data input?
a. `input`
b. `cin`
c. `prompt`
d. `get`

ANSWER: a

39. What would be the output if you were to print the variable named value as declared by this statement: `value = "2" + "2"`?

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a. the number `4`
b. the floating-point value 4.0
c. the string "`22`" (without the quotation marks)
d. a type error, as integers cannot be concatenated

ANSWER: c

40. When a Python interpreter runs a script, what is the script translated into?
a. assembly code
b. byte code
c. interpolated language code
d. ELF-formatted binary

ANSWER: b

41. What component of Python is responsible for the execution of Python byte code?
a. IDLE
b. Python interpreter
c. Python virtual machine (PVM)
d. Python Script Engine (PSE)

ANSWER: c

42. At what point in the interpretation of a Python program are syntax error messages generated?
a. after the conversion of the code into byte code
b. before execution of the program, when it is passed through the translator
c. during execution of the program by the Python virtual machine
d. after user input defined by the program is collected

ANSWER: b

43. When IDLE is used for Python programming, what color is used to distinguish built-in function names?
a. blue
b. green
c. purple
d. red

ANSWER: c

44. What language, created by Tim Berners-Lee, allows browsers to structure the information that is to be displayed on web pages?
a. Python
b. HTML
c. HTTP
d. Java

ANSWER: b

45. What processor was contained in the first mass-produced personal computer?
a. Intel 8080

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b. AMD486
c. NEC V20
d. Motorola 88000

ANSWER: a

46. What type of processing occurs when processes run for a slice of time, then yield access to the CPU to another process, and all active processes are cycled through repeatedly?
a. coalescent processing
b. cooperative processing
c. concurrent processing
d. divisive processing

ANSWER: c

47. What is NOT one of the initial four locations connected by the ARPANET in the 1970s?
a. Stanford Research Institute
b. University of California at Los Angeles
c. University of California Santa Barbara
d. Massachusetts Institute of Technology

ANSWER: d

48. Regardless of whether `print` is passed a single or multiple expressions, what does its output always end with by default?
a. a carriage return
b. a `null` terminator
c. a newline
d. an EOL

ANSWER: c

49. If you want the `print` function on line 2 in the following code to output on the same line as the `print` function on line 1, without printing a newline, what expression should you place in the blank?

```
1 print("Rainbow colors:", "red, orange, yellow, ", _____)
2 print("green, blue, indigo, violet")
```

a. `terminator = ""`
b. `end = ""`
c. `eol = ""`
d. `newline = 0`

ANSWER: b

50. What language was designed based on a theory of recursive functions and is considered to be an ideal language for solving difficult or complex problems?
a. COBOL
b. FORTRAN
c. LISP
d. Assembler

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Chapter 1 Introduction

ANSWER: c

51. What technology replaced the vacuum tube as the mechanism for implementing electronic switches in computer hardware?

a. transistor

b. resistor

c. fully programmable gate array

d. microprocessor

ANSWER: a

52. In the following syntax for the `print` command, what does the ellipsis between expressions indicate?
`print(<expression>,…, <expression>)`

a. The ellipsis indicates that all expressions are required to be included.

b. The ellipsis indicates that the program has a minimum number of expressions that must be included.

c. The ellipsis indicates that you must pass a value of specific type to the expression.

d. The ellipsis indicates that you could include multiple expressions after the first one.

ANSWER: d

53. What was the first PC-based operating system called?

a. Microsoft Disk Operating System (MS-DOS)

b. UNIX

c. Linux

d. Control Program for Microcomputers (CP/M)

ANSWER: d

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