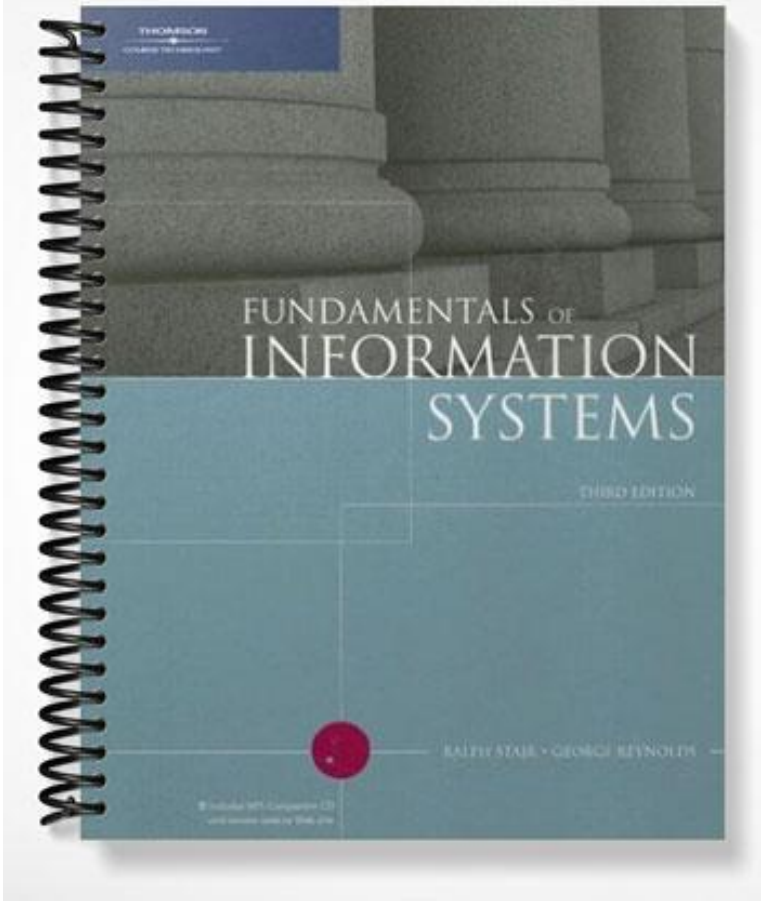
TEST BANK


FUNDAMENTALS OF
INFORMATION
SYSTEMS
THIRD EDITION
RALPH STAIR • GEORGE REYNOLDS

Chapter 2: Hardware and Software

TRUE/FALSE

1. The ALU and the control unit are the two main elements of the CPU.

   ANS: T PTS: 1 REF: 49

2. The control unit performs mathematical calculations.

   ANS: F PTS: 1 REF: 49

3. A printer is an example of hardware.

   ANS: T PTS: 1 REF: 60

4. Clock speed is measured in MIPs.

   ANS: F PTS: 1 REF: 50

5. In simple terms, most CPUs are collections of digital circuits imprinted on silicon wafers.

   ANS: T PTS: 1 REF: 50

6. A byte is composed of seven bits or words.

   ANS: F PTS: 1 REF: 50

7. Coprocessors may be internal or external to the CPU but cannot run at a different clock speed than the CPU.

   ANS: F PTS: 1 REF: 51

8. A CD-ROM represents bits with tiny magnetized areas.

   ANS: F PTS: 1 REF: 53 | 55

9. RAM chips lose their contents if the current is turned off or disrupted.

   ANS: T PTS: 1 REF: 51

10. Compared with memory, secondary storage offers the advantages of nonvolatility, greater capacity, and greater economy.

    ANS: T PTS: 1 REF: 52

11. Sequential access is usually faster than direct access.

    ANS: F PTS: 1 REF: 52

12. One common secondary storage medium is magnetic tape.

ANS: T PTS: 1 REF: 53

13. OMR is used in standardized tests, including SAT and GMAT tests.

ANS: T PTS: 1 REF: 57

14. Primary storage is also called permanent storage.

ANS: F PTS: 1 REF: 52

15. Expandable storage devices can be internal or external.

ANS: T PTS: 1 REF: 55

16. Documentation is a form of coding that describes sequences of instructions for the computer.

ANS: F PTS: 1 REF: 65

17. Time-sharing allows more than one person to use a computer system at the same time.

ANS: T PTS: 1 REF: 69

18. Having an enterprise sphere of influence means that software is targeted toward the needs of an individual user.

ANS: F PTS: 1 REF: 66

19. Multiprocessing involves the simultaneous execution of two or more instructions.

ANS: T PTS: 1 REF: 51

20. A command-based user interface uses pictures and menus displayed on screen to send commands to the computer system.

ANS: F PTS: 1 REF: 67

21. Under preemptive multitasking, a computer operating system uses some criteria to decide how long to allocate to any one task before giving another task a turn to use the operating system.

ANS: T PTS: 1 REF: 73

22. The terms multitasking and time-sharing can be used interchangeably.

ANS: F PTS: 1 REF: 68-69

23. The human resource department of a large firm is an example of a formal workgroup.

ANS: T PTS: 1 REF: 66

24. A graphical user interface requires that text commands be given to the computer to perform basic activities.

ANS: F PTS: 1 REF: 67

25. Multitasking allows more than one person to use a computer system at the same time.

ANS: F PTS: 1 REF: 68

26. An information system that operates in the personal sphere of influence supports a workgroup in the attainment of a common goal.

ANS: F PTS: 1 REF: 66

27. An operating system cannot control more than one computer.

ANS: F PTS: 1 REF: 66

28. A workgroup is two or more people who work together to achieve a common goal.

ANS: T PTS: 1 REF: 66

29. Mac OS X is a network OS sold by Novell that can support end users on Windows, Macintosh, and UNIX platforms.

ANS: F PTS: 1 REF: 71

30. Parallel processing speeds processing by linking several processors to operate at the same time.

ANS: T PTS: 1 REF: 51

MULTIPLE CHOICE

1. Which part of the central processing unit performs mathematical calculations and makes logical comparisons?
   a. Control Unit
   b. Registers
   c. Cache
   d. ALU

   ANS: D PTS: 1 REF: 49

2. The instruction phase together with the execution phase is called a(n) ____.
   a. CPU instruction
   b. ALU cycle
   c. machine cycle
   d. machine instruction

   ANS: C PTS: 1 REF: 50

3. ____ is the Internet-enabled operating system for the Hewlett-Packard e3000 family of computers.
   a. z/OS
   b. Mac OS X Server
   c. MPE/iX
   d. Red Hat Linux

   ANS: C PTS: 1 REF: 73

4. How many bits represent a byte?
   a. 2
   b. 4
   c. 8
   d. 16

   ANS: C PTS: 1 REF: 50

5. RAM is ____.

a. volatile and temporary
b. nonvolatile and permanent
c. nonvolatile and temporary
d. volatile and permanent

ANS: A PTS: 1 REF: 51

6. ____ is a type of memory that is nonvolatile.
a. Register
b. RAM
c. ROM
d. Cache memory

ANS: C PTS: 1 REF: 51

7. A magnetic tape is an example of a(n) ____.
a. sequential access storage medium
b. optical storage medium
c. RAID
d. storage area network medium

ANS: A PTS: 1 REF: 53

8. RAID is different from other storage devices because it ____.
a. is based on optics
b. is less expensive
c. can rebuild lost data
d. minimizes storage requirements

ANS: C PTS: 1 REF: 54

9. A ____ is a special-purpose high-speed network that provides direct connections between data storage devices and computers.
a. local area network
b. wide area network
c. sequential access storage device
d. storage area network

ANS: D PTS: 1 REF: 54

10. ____ devices are used in retail operations to enter sales information into the computer system.
a. MICR
b. DASD
c. OCR
d. POS

ANS: D PTS: 1 REF: 57

11. Which of the following has the fastest processing speed?
a. Mainframe computers
b. Midrange computers
c. Workstations
d. Supercomputers

ANS: D PTS: 1 REF: 64

12. Programs that help users solve particular computing problems are called ____.
a. systems software
b. application software
c. computer hardware
d. documentation

ANS: B PTS: 1 REF: 65

13. ____ coordinates the activities and functions of the hardware and the programs of the computer system.
a. Microsoft Office Suite software
b. Application software
c. General software
d. Systems software

ANS: D PTS: 1 REF: 65

14. ____ software enables users to improve their effectiveness, increasing the amount and quality of work they can do.

a. Spreadsheet
b. Database
c. Personal productivity
d. Workgroup

ANS: C PTS: 1 REF: 65-66

15. The ____ allows applications to make use of the operating system.
a. user interface
b. application program interface
c. kernel interface
d. synchronous dynamic RAM

ANS: B PTS: 1 REF: 67

16. A computer system that can smoothly handle an increasing number of concurrent users exhibits ____.
a. multithreading
b. OLE capability
c. paging
d. scalability

ANS: D PTS: 1 REF: 69

17. The operating system performs a(n) ____ function to ensure that files in secondary storage are available when needed.
a. virtual memory
b. linking and embedding
c. file management
d. multitasking

ANS: C PTS: 1 REF: 69

18. Linux is actually only the ____ of an operating system.
a. source code
b. kernel
c. application interface
d. workgroup component

ANS: B PTS: 1 REF: 70

19. ____ is an operating system developed under the GNU General Public License, and its source code is freely available to everyone.
a. Linux
b. Galileo
c. Windows NT
d. Windows 2000

ANS: A PTS: 1 REF: 70

20. Software created for a specific application, that is normally one-of a kind, is referred to as ____.
a. proprietary
b. off-the-shelf
c. command-based
d. open-source

ANS: A PTS: 1 REF: 75

21. A company that provides software, end-user support, and the computers on which to run the software is called a(n) ____.
a. application service provider
b. VAR
c. outsourcer
d. software management firm

ANS: A PTS: 1 REF: 76

22. ____ is a technology that employs a microchip with an antenna that broadcasts its unique identifier and location to receivers.
a. ATM
b. RFID
c. MICR
d. POS

ANS: B PTS: 1 REF: 58

23. Microsoft Office and Corel's WordPerfect Office are examples of ____.
    a. utility programs
    b. operating systems
    c. software suites
    d. enterprise software

    ANS: C PTS: 1 REF: 81

24. A(n) ____ may be a large, formal, permanent organizational entity such as a section or department, or a temporary group formed to complete a specific project.
    a. sphere of influence
    b. operating system
    c. workgroup
    d. personal sphere of influence

    ANS: C PTS: 1 REF: 66

25. Which of the following allows individuals to access and command the computer system?
    a. User interface
    b. Menus
    c. Utilities
    d. Hardware

    ANS: A PTS: 1 REF: 67

26. ____ is a feature of many spreadsheet programs that allows the spreadsheet to maximize or minimize a quantity subject to certain constraints.
    a. Multitasking
    b. Optimization
    c. Pipelining
    d. Stabilization

    ANS: B PTS: 1 REF: 79

27. ____ applications are ideal for storing, manipulating, and retrieving data.
    a. Spreadsheet
    b. Word processing
    c. Online information
    d. Database

    ANS: D PTS: 1 REF: 79

28. Windows ____ is a family of Microsoft operating systems included with or embedded into small computer devices.
    a. Mobile
    b. Embedded
    c. NetWare
    d. Server

    ANS: B PTS: 1 REF: 74

29. Each CPU produces a series of electronic pulses at a predetermined rate, called the ____, which affects machine cycle time.
    a. circuit rate
    b. transmission speed
    c. wordlength
    d. clock speed

    ANS: D PTS: 1 REF: 50

30. A ____ is a low-cost, centrally managed computer with essential but limited capabilities that is devoid of a DVD player, internal disk drive, and expansion slots.
    a. thin client
    b. laptop computer
    c. workstation
    d. server

    ANS: A PTS: 1 REF: 62

31. ____ access occurs when data must by accessed in the order in which it is stored.
    a. Direct
    b. System
    c. Sequential
    d. Random

ANS: C PTS: 1 REF: 52

32. ____ are a type of hard-copy output device used for general design work, such as blueprints or schematics.
a. Display monitors
b. Plotters
c. OLEDs
d. LCDs

ANS: B PTS: 1 REF: 60

33. A ____ is a large, powerful computer shared by dozens or even hundreds of concurrent users connected to the machine over a network.
a. PC
b. workstation
c. thin client
d. mainframe computer

ANS: D PTS: 1 REF: 63

34. A ____ is a computer used by many users to perform a specific task, such as running network or Internet applications.
a. thin client
b. desktop computer
c. computer server
d. tablet PC

ANS: C PTS: 1 REF: 63

35. Information systems that operate within the ____ sphere of influence support the firm in its interaction with its environment.
a. personal
b. organizational
c. enterprise
d. workgroup

ANS: C PTS: 1 REF: 66

36. Information systems that operate within the ____ sphere of influence serve the needs of an individual user.
a. personal
b. workgroup
c. employee
d. contact

ANS: A PTS: 1 REF: 65

37. ____ programs can be used to develop advertising brochures, announcements, and full-color presentations.
a. Graphics
b. Database
c. Spreadsheet
d. Project management

ANS: A PTS: 1 REF: 80

38. The ____ sequentially accesses program instructions, decodes them, and coordinates the flow of data in and out of the ALU, primary storage, and even secondary storage and various output devices.
a. SASD
b. RAM
c. control unit
d. coprocessor

ANS: C PTS: 1 REF: 49

39. A ____ speeds processing by executing specific types of instructions while the CPU works on another processing activity.
a. control unit
b. secondary storage device
c. SASD
d. coprocessor

ANS: D PTS: 1 REF: 51

40. A ____ is a five-inch diameter CD-ROM look-alike with the ability to store about 135 minutes of digital video or several gigabytes of data.
    a. CD-R
    b. DVD
    c. CD-RW
    d. memory card

    ANS: B PTS: 1 REF: 55

COMPLETION

1. In _____, the combination of circuit states is fixed, and therefore its contents are not lost if the power is removed.

   ANS:
   ROM
   Read-only memory
   ROM (Read-only memory)
   Read-only memory (ROM)

   PTS: 1 REF: 51

2. A(n) _____ provides high-speed connections between data storage devices and computers.

   ANS:
   storage area network
   SAN
   storage area network (SAN)
   SAN (storage area network)

   PTS: 1 REF: 54

3. A(n) _____ is a terminal used by most bank customers to perform withdrawals and other transactions.

   ANS:
   ATM
   automatic teller machine
   ATM (automatic teller machine)
   automatic teller machine (ATM)

   PTS: 1 REF: 58

4. _____ are the most powerful computer systems, with the fastest processing speeds.

   ANS: Supercomputers

   PTS: 1 REF: 64

5. _____ refers to the ability to increase the processing capability of a computer system so that it can handle more transactions in a given period.

ANS: Scalability

PTS: 1 REF: 63

6. A(n) _____ is a more powerful personal computer that is used for technical computing, such as engineering, but still fits on a desktop.

ANS: workstation

PTS: 1 REF: 63

7. _____ memory holds program instructions and data.

ANS: Primary

PTS: 1 REF: 49

8. The number of bits the CPU can process at one time is referred to as the _____.

ANS: wordlength

PTS: 1 REF: 50

9. _____ computing is the use of a collection of computers, often owned by multiple individuals or organizations, to work in a coordinated manner to solve a common problem.

ANS: Grid

PTS: 1 REF: 51

10. One application of _____ is to place a microchip on retail items and install in-store readers that constantly count the inventory on the shelves.

ANS:
RFID
radio-frequency identification
RFID (radio-frequency identification)
radio-frequency identification (RFID)

PTS: 1 REF: 58

11. A computer system that enables a sales representative to run an Internet browser and access a database at the same time uses a processing activity called _____.

ANS: multitasking

PTS: 1 REF: 68

12. A specific software program developed for a particular company is called _____ software.

ANS: contract

PTS: 1 REF: 75

13. _____ software is the set of programs designed to coordinate the activities and functions of the hardware and various programs throughout the computer system.

    ANS: Systems

    PTS: 1 REF: 65

14. _____ software is an existing software program that is purchased.

    ANS:
    Off-the-shelf
    Off the shelf

    PTS: 1 REF: 75

15. Each programming language has its own set of rules, called the _____ of the language.

    ANS: syntax

    PTS: 1 REF: 84

16. A software _____ is a defect in a computer program that keeps it from performing in the manner intended.

    ANS: bug

    PTS: 1 REF: 85

17. The combination of a particular hardware configuration and systems software package is known as a(n) _____.

    ANS: computer system platform

    PTS: 1 REF: 65

18. A(n) _____ is a set of computer programs that controls the computer hardware and acts as an interface with application programs.

    ANS:
    operating system
    OS
    operating system (OS)
    OS (operating system)

    PTS: 1 REF: 66

19. The first user interfaces for mainframe and personal computer systems were _____ based.

    ANS: command

    PTS: 1 REF: 67

20. Programmers can use _____ to create application software without having to understand the inner workings of the operating system.

    ANS:
    APIs
    application program interfaces
    APIs (application program interfaces)
    application program interfaces (APIs)

    PTS: 1 REF: 67

21. An operating system with _____ capabilities allows a user to run more than one application at the same time.

    ANS: multitasking

    PTS: 1 REF: 68

22. The ability of the computer to handle an increasing number of concurrent users smoothly is called _____.

    ANS: scalability

    PTS: 1 REF: 69

23. A software _____ is a collection of single application programs packaged in a bundle.

    ANS: suite

    PTS: 1 REF: 81

24. There are two basic types of software: systems software and _____ software.

    ANS: application

    PTS: 1 REF: 65

25. The _____ Server is the first modern server OS from Apple Computer.

    ANS: Mac OS X

    PTS: 1 REF: 73

ESSAY

1. Contrast the various types of CD technology.

    ANS:

A common form of optical disc is called compact disc read-only memory (CD-ROM). After data has been recorded on a CD-ROM, it cannot be modified—the disc is "read only." CD-recordable (CD-R) discs allow data to be written once to a CD disc. CD-rewritable (CD-RW) technology allows personal computer users to replace their 3.5-inch disks with high-capacity CDs that can be written on and edited. The CD-RW disc can hold roughly 500 times the capacity of a 1.4-MB 3.5-inch disk.

PTS: 1 REF: 55

2. Explain the difference between systems software and application software.

ANS:
Systems software is the set of programs designed to coordinate the activities and functions of the hardware and various programs throughout the computer system. Application software consists of programs that help users solve particular computing problems.

PTS: 1 REF: 65

3. List five examples of tasks performed by the operating system.

ANS:
- Performing common computer hardware functions
- Providing a user interface
- Providing a degree of hardware independence
- Managing system memory
- Managing processing tasks
- Providing networking capability
- Controlling access to system resources
- Managing files

PTS: 1 REF: 67

4. Discuss the advantages and disadvantages of using off-the-shelf software.

ANS:
The advantages of using off-the-shelf software are:
- The initial cost is lower since the software firm is able to spread the development costs over a large number of customers.
- There is a lower risk that the software will fail to meet the basic business needs—you can analyze existing features and the performance of the package.
- Package is likely to be of high quality since many customer firms have tested the software and helped identify many of its bugs.

The disadvantages of using off-the-shelf software are:
- An organization might have to pay for features that are not required and never used.
- The software may lack important features, thus requiring future modification or customization. This can be very expensive because users must adopt future releases of the software as well.
- Software may not match current work processes and data standards.

PTS: 1 REF: 76

5. Explain what is meant by parallel processing and grid computing.

ANS:

Parallel processing is a form of multiprocessing that speeds processing by linking several processors to operate at the same time, or in parallel. Grid computing is the use of a collection of computers, often owned by multiple individuals or organizations, to work in a coordinated manner to solve a common problem. Grid computing is one low-cost approach to parallel processing.

PTS: 1 REF: 51