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True / False

1. Each central processing unit (CPU) produces a series of electronic pulses at a predetermined rate, called the clock speed, which affects machine cycle time.
    a. True
    b. False
ANSWER: True

2. RAM stands for random access memory; a form of memory that holds its contents even if the current is turned off or disrupted.
    a. True
    b. False
ANSWER: False

3. You have lots of images on your hard drive totaling 500 million bytes. A 2 Gigabyte storage device will be adequate to store those photos
    a. True
    b. False
ANSWER: True

4. Massively parallel processing systems are a form of multiprocessing that speeds processing by linking hundreds or thousands of processors to operate at the same time.
    a. True
    b. False
ANSWER: True

5. Secondary storage can store large amounts of data, instructions, and information more permanently than allowed with main memory.
    a. True
    b. False
ANSWER: True

6. Virtual tape technology can decrease data access time, lower the total cost of ownership, and reduce the amount of floor space consumed by tape operations.
    a. True
    b. False
ANSWER: True

7. In a typical computer configuration, secondary storage has a much larger capacity than the volatile random access memory.
    a. True
    b. False
ANSWER: True

8. Solid state storage devices (SSDs) store data in hard disk drives or optical media rather than memory chips.
    a. True

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    b. False

ANSWER: False

9. A liquid crystal display (LCD) functions by exciting organic compounds with electric current to produce bright and sharp images.
    a. True
    b. False

ANSWER: False

10. Bioprinting, which uses 3D printers to build human parts and organs from actual human cells, is widely considered to be unethical.
    a. True
    b. False

ANSWER: False

11. When dealing with large multinational or global organizations, vendors often sell their software programs to the organizations but then outsource the technical support to local, third-party distributors.
    a. True
    b. False

ANSWER: True

12. The need for additional data storage capacity is one of the factors driving the growth in data centers.
    a. True
    b. False

ANSWER: True

13. Thin client computers are a type of portable single-user computers.
    a. True
    b. False

ANSWER: False

14. As the difference among computer manufacturers in the areas of price and performance narrows, support for green computing is emerging as a new business strategy for these companies to distinguish themselves from the competition.
    a. True
    b. False

ANSWER: True

15. The scope of green computing is limited to the efficient and environmentally responsible design and manufacture of all types of computers.
    a. True
    b. False

ANSWER: False

16. Some smartphones allow you to take notes and to "write" emails or text messages by speaking into the phone. These are examples of speech-recognition technology.

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a. True

b. False

ANSWER: True

17. Depending on the brand of tablet you purchase, you may be able to enter data by typing on a keyboard, writing on the screen with a stylus, or speaking into the tablet's microphone.

a. True

b. False

ANSWER: True

18. An operating system is a set of programs that controls the computer hardware and acts as an interface with applications.

a. True

b. False

ANSWER: True

19. The operating system converts a basic user request into the set of detailed instructions that the computer hardware requires, thus acting as an intermediary between the application and the hardware.

a. True

b. False

ANSWER: True

20. The operating system's application programming interface (API) provides software developers with tools they use to build application software without needing to understand the inner workings of the operating system and hardware.

a. True

b. False

ANSWER: True

21. A command-based user interface employs icons and menus that people use to send commands to the computer system.

a. True

b. False

ANSWER: False

22. Most operating systems support virtual memory which allocates space on the hard disk to supplement the immediate, functional memory capacity of RAM.

a. True

b. False

ANSWER: True

23. If 10 users can run programs at the same time on the same computer, it is known as *multi-tasking.*

a. True

b. False

ANSWER: False

24. Your friend has a Mac that runs OS X. If she needs to run a Windows app on it, she can set it to run Windows also.

a. True

b. False

ANSWER: True

25. Corporate executives often object to the use of open-source software because it lacks formal technical support, even though information and solutions regarding the software are usually readily available online.

a. True

b. False

ANSWER: True

26. An embedded system is a computer system that is implanted in and dedicated to the control of another device.

a. True

b. False

ANSWER: True

27. Utility programs help to perform maintenance, correct problems, merge and sort sets of data, keep track of computer jobs, and compress data files.

a. True

b. False

ANSWER: True

28. The primary function of application software is to apply the power of the computer to enable people, workgroups, and the entire enterprise to solve problems and perform specific tasks.

a. True

b. False

ANSWER: True

29. Proprietary software is mass-produced by software vendors to address needs that are common across businesses, organizations, or individuals.

a. True

b. False

ANSWER: False

30. Software as a Service (SaaS) allows businesses to subscribe to Web-delivered business application software by paying a monthly service charge or a per use fee.

a. True

b. False

ANSWER: True

31. Software as a Service (SaaS) refers to the use of computing resources, including software and data storage, on the Internet rather than local computers.

a. True

b. False

ANSWER: False

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32. A software suite is a collection of programs packaged together as a bundle and typically includes a word processor, spreadsheet program, graphics program, and more.
    a. True
    b. False
ANSWER: True

33. Suppose your friend, who is a small business owner, wants to computerize her business functions such as accounting, payroll, and inventory management. She would need to purchase separate software to meet each functional requirement.
    a. True
    b. False
ANSWER: False

34. Each programming language has a set of rules, called the program code of the language.
    a. True
    b. False
ANSWER: False

35. A single computer can be used by a single user or by multiple, simultaneous users.
    a. True
    b. False
ANSWER: True

36. An example of a common hardware function performed by the operating system is presenting information on a monitor or printer.
    a. True
    b. False
ANSWER: True

37. Operating systems provide a measure of security by allowing users to access to those resources they've been cleared to use as well as other users' resources if those resources are beneficial.
    a. True
    b. False
ANSWER: False

38. Utility programs are used to perform system maintenance, such as repairing errors on a hard drive, improving system security, and optimizing sluggish system processes.
    a. True
    b. False
ANSWER: True

39. If a large organization wants software that will benefit the entire organization—what's known as enterprise application software—the organization must develop it specifically for the business in order to get the functionality required.
    a. True
    b. False
ANSWER: False

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40. The use of virtual servers is growing rapidly because virtualization can save millions of dollars per year in capital and operating expenses.
    a. True
    b. False
ANSWER: True

41. Software can be divided into two types: operating software and application software.
    a. True
    b. False
ANSWER: False

42. Software that allows an individual to create a to-do list, take notes, and organize tasks in a database would be classified as having a personal sphere of influence.
    a. True
    b. False
ANSWER: True

Multiple Choice

43. A _____ is a climate-and-access-controlled building or a set of buildings that houses the computer hardware that delivers an organization's data and information services.
    a. data mart   b. data warehouse
    c. data center   d. data mine
ANSWER: c

44. A type of memory whose contents are not lost if the power is turned off or interrupted is said to be _____.
    a. unarbitrary   b. nonvolatile
    c. inaccessible   d. nonadjacent
ANSWER: b

45. _____ is the use of a collection of computers, often owned by many people or different organizations, to work in a coordinated manner to solve a common problem.
    a. Cloud computing   b. Grid computing
    c. Parallel computing   d. Web computing
ANSWER: b

46. _____ is a program concerned with the efficient and environmentally responsible design, manufacture, operation, and disposal of IS-related products.
    a. Green computing   b. Grid computing
    c. Cloud computing   d. Utility computing
ANSWER: a

47. The component of a computer that provides the CPU with a working storage area for program instructions and data is called the _____.
    a. main memory   b. input/output device
    c. bus   d. processor

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ANSWER: a

48. Carson's supervisor has asked him to review a variety of portable computers for possible purchase for their company's employees. Which of the following should Carson NOT consider buying?
    a. laptops   b. notebooks
    c. nettops   d. tablets
ANSWER: c

49. ＿＿＿＿ is a storage technology that is primarily used only for backups.
    a. Magnetic disk   b. Compact disc
    c. Magnetic tape   d. Cache memory
ANSWER: c

50. 3D printing is ＿＿＿＿＿＿.
    a. printing illusions on paper   b. used to make solid products
    c. for kids to play with   d. the same as 2D printing
ANSWER: b

51. A(n) ＿＿＿＿ device provides data and instructions to the computer and receives results from it.
    a. back-side   b. expansion
    c. internal   d. input/output
ANSWER: d

52. ＿＿＿＿ are used in standardized tests, including the SAT and GMAT tests, and to record votes in elections.
    a. Magnetic Ink Character Recognition (MICR) devices   b. Optical mark recognition (OMR) systems
    c. Speech recognition devices   d. Optical character recognition (OCR) systems
ANSWER: b

53. Helen is 72 years old and is a retired school teacher on a fixed income. She would like to buy a new computer so that she can communicate via email, follow friends and family on social media, and occasionally access recipes and gardening tips from the Web. An important thing to consider is that Helen has arthritis in her hands, making it difficult for her to work with small buttons and gadgets. So, of the following options, her best choice is probably a(n) ＿＿＿＿＿＿.
    a. smartphone   b. e-book
    c. desktop   d. nettop
ANSWER: d

54. ＿＿＿＿ are used to support engineering and technical users who perform heavy mathematical computing, computer-assisted design (CAD), video editing, and other applications requiring a high-end processor.
    a. Desktops   b. Netbooks
    c. Workstations   d. Notebooks
ANSWER: c

55. A ＿＿＿＿ is a low-cost, centrally managed computer with no internal or external attached drives for data storage with limited capabilities.
    a. nettop computer   b. cloud computer

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c. thin client   d. workstation

ANSWER: c

56. _____ are the most powerful computers with the fastest processing speed and highest performance.
 a. Blade servers   b. Workstations
 c. Mainframe computers   d. Supercomputers

ANSWER: d

57. CPU clock speed is the _____ at a predetermined rate.
 a. number of instructions processed   b. number of electronic pulses created
 c. number of files created   d. number of memory pages loaded

ANSWER: b

58. Which of the following types of credit cards is currently diminishing in popularity and being replaced by the other three types?
 a. magnetic stripe   b. chip card
 c. smart card   d. contactless payment card

ANSWER: a

59. Which of the following is NOT an example of a common use of a point-of-sale (POS) device?
 a. A server in a restaurant uses a POS to communicate a diner's order to the kitchen.
 b. A nurse in a hospital uses a POS to enter a patient's vital signs into his records.
 c. A barrista in a coffee store uses a POS to record a sale of some bakery items.
 d. A teller in a bank uses a POS to withdraw money for a customer.

ANSWER: d

60. An information system that operates in the _____ sphere of influence supports two or more people who work together to achieve a common goal.
 a. personal   b. workgroup
 c. enterprise   d. social

ANSWER: b

61. An operating system with _____ capabilities allows a user to run more than one program concurrently.
 a. networking   b. hardware independence
 c. memory management   d. multitasking

ANSWER: d

62. The _____ is the heart of the operating system and controls its most critical processes.
 a. user interface   b. register
 c. kernel   d. cache

ANSWER: c

63. _____ is an open-source operating system whose source code is freely available to everyone.
 a. Linux   b. Mac OS X
 c. Chrome   d. Unix

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ANSWER: a

64. Which of the following statements is **NOT** true about a mainframe computer?

a. A single computer with a single user is typical of a mainframe computer.

b. A mainframe computer provides the computing and storage capacity to meet massive data processing requirements.

c. A mainframe computer offers users high performance and excellent system availability.

d. A wide range of application software has been developed to run in the mainframe environment.

ANSWER: a

65. New cars come with an onboard computer that controls anti-lock brakes, air bag deployment, fuel injection, etc. The software is known as _____.

a. a multi-user system   b. an embedded system

c. an enterprise system   d. mobile application software

ANSWER: b

66. Today's mobile phones and some PCs use a touch user interface called a _____ to allow people to control the personal computer.

a. multiprocessing user interface   b. command-based user interface

c. speech recognition user interface   d. natural user interface

ANSWER: d

67. One of the **disadvantages** of proprietary software is that _____.

a. it is hard to control results even if one is involved in the development of software

b. it can take a long time and significant resources to develop the required software features

c. it does not allow modification of features that one might need to counteract an initiative by competitors

d. it is difficult to achieve what is required in terms of features and reports

ANSWER: b

68. One of the advantages of off-the-shelf software is that _____.

a. an organization does not have to pay for features that are not required and never used

b. the software always matches current work processes and data standards

c. the initial cost is lower because the software firm can spread the development costs over many customers

d. the software contains important features, thus eliminating the need for future modification and customization

ANSWER: c

69. The use of middleware to connect disparate systems has evolved into an approach for developing software and systems called _____.

a. cloud computing   b. rapid application development

c. service-oriented architecture   d. Software as a Service

ANSWER: c

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70. One advantage of proprietary software versus off-the-shelf software is that _____.

a. the initial cost is lower

b. the software is likely to meet the basic business needs that are common across organizations

c. the software is likely to be of high quality because many customer firms have tested the software and helped identify its bugs

d. the software provides a company a competitive advantage by solving problems in a unique manner

ANSWER: d

71. _____ is a personal application software that includes a wide range of built-in functions for statistical, financial, logical, database, graphics, and date and time calculations.

a. Word processing   b. Desktop Publishing (DTP)

c. Spreadsheet   d. Graphics

ANSWER: c

72. A global positioning system (GPS) device uses a(n) _____ to help people find their way around town or more remote areas.

a. user software   b. integrated development environment

c. personal productivity software   d. embedded system

ANSWER: d

73. All of the following are examples of someone using personal productivity software **EXCEPT** _____.

a. Shawna creating an electronic to-do list for the weekend

b. Mark entering appointments into his online calendar

c. Callie entering a customer's order into a restaurant's ordering system

d. Brandon recording the number of miles he's run each day on his exercise tracker

ANSWER: c

74. All of the following are examples of activities performed by an operating system **EXCEPT** _____.

a. allowing a user to manage system memory

b. allowing a user to control common computer hardware functions

c. allowing a user to manage files

d. allowing a user to do word processing

ANSWER: d

75. Kendra is taking a class in Finance and she has been asked to give a speech about a case study in which she's been working. She wants to create a set of slides containing a summary of her study notes that she will project on a screen while she's speaking. Which type of personal application software should she use to create her slides?

a. word processing   b. database

c. spreadsheet analysis   d. presentation graphics

ANSWER: d

76. Globally, spending on _____ now exceeds other categories of IT expenditures.

a. hardware   b. software

c. servers   d. operating systems

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ANSWER: b

77. Which of the following is a smart way to reduce the impact of software bugs on your own computing?
    a. Register the software programs you buy so that you receive bug alerts, fixes, and patches.
    b. Install the latest software updates
    c. Check the read-me files or online support Web site for patches and other solutions.
    d. All of these answers
ANSWER: d

Completion

78. Clock speed of the central processing unit (CPU) is often measured in billions of cycles per second also known as
_____.
ANSWER: gigahertz

79. The ability to increase the processing capability of a computer system so that it can handle more users, more data, or more transactions in a given period is known as _____.
ANSWER: scalability

80. Key to the success of grid computing is a(n) _____ that acts as a grid leader and traffic monitor.
ANSWER: central server

81. Eight bits together form a(n) _____.
ANSWER: byte

82. A(n) _____ is a direct access storage device that is used to store and retrieve data from rapidly rotating disks coated with magnetic material.
ANSWER: hard disk drive (HDD)

83. A universal serial bus (USB) _____ drive is one example of a commonly used solid state secondary storage device (SSD).
ANSWER: flash

84. Optical mark recognition (OMR) and optical character recognition (OCR) are the two categories of a(n) _____.
ANSWER: optical data reader

85. _____ is the simultaneous execution of the same task on multiple processors to obtain results faster.
ANSWER: Parallel computing
         parallel computing

86. _____ is a technology that employs a microchip with an antenna to broadcast its unique identifier and location to receivers.
ANSWER: Radio frequency identification (RFID)
         RFID
         radio frequency identification

87. If you would like a portable computer that has a roughly 13-inch screen, keyboard, and a pointing device, choose a

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_____ computer.
ANSWER: laptop

88. A(n) _____ is a climate-and-access-controlled building, or set of buildings, that houses the computer hardware that delivers an organization's data and information services.
ANSWER: data center

89. _____ input devices, such as Nintendo's Wii remote and PlayStation's Move game controllers, have become very popular in the gaming industry.
ANSWER: Motion-sensing
          motion-sensing

90. One common use of a _____ is in engineering design, when designers need to make a prototype, or model, of the object they're designing.
ANSWER: 3D printer

91. For most companies, the spheres of influence are _____, workgroup, and enterprise.
ANSWER: personal

92. A(n) _____ is a defect in a computer program that keeps it from performing as its users expect it to perform.
ANSWER: software bug
          bug

93. _____ programming language is the precursor to languages such as C++, C#, and Java.
ANSWER: C

94. A(n) _____ is a set of programming instructions and standards for one software program to access and use the services of another software program.
ANSWER: application programming interface (API)

95. Being able to develop software without concern for the specific underlying hardware is referred to as _____.
ANSWER: hardware independence

96. _____ works by swapping programs or parts of programs between memory and one or more disk drives.
ANSWER: Virtual memory

97. _____ software addresses the needs that are *common* across businesses, organizations, or individuals.
ANSWER: Off-the-shelf
          Off the shelf
          Package
          Packaged
          Mass-produced
          Mass produced

98. Your business manager wants to be able to integrate multiple business applications. The integration software is typically known as _____.

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ANSWER: Middleware

99. Office workers have the need for a word processor, spreadsheet program, database program, and graphic presentations software. A package that combines all these software programs is known as a(n) _____ .
ANSWER: software suite
office suite
application suite

100. _____ is a set of rules associated with a programming language.
ANSWER: Syntax

101. Mac users can set up their computers to run both Windows and Mac OS X and select the platform they want to work with when they boot their computers. This is called dual _____.
ANSWER: booting

102. Organizations that run hundreds or even thousands of servers in a server farm are naturally concerned about _____, which is why they're looking for low-cost, renewable energy sources.

ANSWER: power usage
power
performance per watt

103. The ethical imperative that "care must be taken when recycling or destroying electronic devices to avoid contaminating the environment" is associated with _____.
ANSWER: green computing

104. Lara recently purchased the Microsoft Office Suite for her own use on her laptop. She has not really purchased the software but rather a ____.
ANSWER: single-user license

Essay

105. Explain the primary difference between random access memory (RAM) and read-only memory (ROM).
ANSWER: RAM chips are volatile storage devices, meaning they lose their contents if the current is turned off or disrupted (as happens in a power surge, brownout, or electrical noise generated by lightning or nearby machines). ROM is nonvolatile meaning that its contents are not lost if the power is turned off or interrupted.

106. What is grid computing? How does it work?
ANSWER: Grid computing is the use of a collection of computers, often owned by many people or organizations, to work in a coordinated manner to solve a common problem. Key to the success of grid computing is a central server that acts as a grid leader and traffic monitor. This controlling computer divides the computing task into subtasks and assigns the work to computers on the grid that have (at least temporarily) surplus processing power. The central server also monitors the processing, and if a member of the grid fails to complete a subtask, it will restart or reassign the task. When all the tasks are completed, the controlling server combines the results and advances to the next task until the whole job is completed.

107. Distinguish between systems software and applications software.

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

108. What is the sphere of influence? Identify three spheres of influence.

ANSWER: One useful way of classifying the many potential uses of information systems is to identify the scope of the problems and opportunities that the system is designed to address. This scope is called the sphere of influence. For most companies, the spheres of influence are personal, workgroup, and enterprise. The personal sphere of influence concerns the needs of individual users. The workgroup sphere of influence addresses the needs of two or more people who work together to achieve a common goal. The enterprise sphere of influence supports a firm in its interaction with customers, suppliers, shareholders, competitors, special-interest groups, the financial community, and government agencies.

109. Distinguish between multitasking and multithreading.

ANSWER: Multitasking allows more than one program to run concurrently on an operating system. Multithreading allows different threads of a single program to run concurrently. A thread is a set of instructions within an application that is independent of other threads.

110. Discuss three disadvantages of using proprietary software.

ANSWER: It can take a long time and significant resources to develop the required features. In-house system developers may become hard pressed to provide the required level of ongoing support and maintenance because of pressure to move on to other new projects. The features and performance of software that has yet to be developed presents potential risk.

111. Discuss the growth in mobile application software.

ANSWER: The number of applications (apps) for smartphones and other mobile devices has exploded in recent years. Besides the valuable mobile apps that come with these devices, hundreds of thousands of applications have been developed by third parties. For example, iPhone users can download and install thousands of apps using Apple's App Store. Over 1 million mobile apps are available at the Google Play site for users of Android handsets. Microsoft and other software companies are also investing in mobile apps for devices that run on their software.