https://selldocx.com/products/test-bank-mis-8e-bidgoli

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| Chapter 02. Computers | s: The Machines | Behind Computing | |
| 1. An object code must b | e translated into s | ource code for a computer to re | ad and execute it. |
| | a. | True | |
| | b. | False | |
| ANSWER: | | | False |
| 2. The hardware compon | nent of a computer | system consists of programs w | ritten in computer languages. |
| | a. | True | |
| | b. | False | |
| ANSWER: | | | False |
| 3. The arithmetic logic u | nit and the control | unit are part of the Basic Input | Output System. |
| | a. | True | |
| | b. | False | |
| ANSWER: | | | False |
| 4. A computer with a 32- | -bit processor can | perform calculations with large | r numbers better than a 64-bit system. |
| | a. | True | |
| | b. | False | |
| ANSWER: | | | False |
| 5. ENIAC is an example | of a first-generation | on computer. | |
| • | a. | True | |
| | b. | False | |
| ANSWER: | | | True |
| 6. Very-large-scale integ | ration (VLSI) circ | uits were introduced in fifth-ge | neration computers. |
| , , | a. | True | 1 |
| | b. | False | |
| ANSWER: | | | False |
| 7. A byte is a single valu | e of 0 or 1. | | |
| , , | a. | True | |
| | b. | False | |
| ANSWER: | | | False |
| 8. Extended ASCII is a d | lata code that allow | vs the representation of 1024 ch | naracters. |
| | a. | True | |
| | b. | False | |
| ANSWER: | | | False |
| 9. Computers perform al | l tasks using a con | nbination of arithmetic and logi | cal operations. |
| 1 1 | a. | True | • |
| | b. | False | |
| ANSWER: | | | False |
| | | | |

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| 10. Computers cannot stor | re massi | ve amounts of d | ata in small spaces. | | |
| 1 | a | | True | | |
| | b |) . | False | | |
| ANSWER: | | | | False | |
| 11. Inkjet printers produce | e charact | ters by projectin | | lly charged droplets of ink | that create an image. |
| | a | | True | | |
| | b |). | False | | |
| ANSWER: | | | | True | |
| 12. In network-attached st | - ' | ŕ | | s, its performance increase | s. |
| | a | | True | | |
| | b |). | False | | |
| ANSWER: | | | | False | |
| 13. A server is a set of pro | ograms f | or controlling an | | er hardware and software. | |
| | a | | True | | |
| | b |) . | False | | |
| ANSWER: | | | | False | |
| 14. Spreadsheet software | is more j | powerful than fi | | ware. | |
| | a | | True | | |
| | b |). | False | | |
| ANSWER: | | | | False | |
| 15. Fourth-generation lang | guages (| 4GLs) are also | | uages. | |
| | a | | True | | |
| | b |). | False | | |
| ANSWER: | | | | False | |
| 16. A(n) is a step-b understand. | y-step d | irection for perf | forming a specific task | x, which is written in a lang | guage the computer can |
| | a. | array | | | |
| | b. | server | | | |
| | c. | cache | | | |
| | d. | progra | m | | |
| ANSWER: | | | | | d |
| 17. A is a link betw | veen dev | ices connected t | to a computer. | | |
| a. | | motherboard | | | |
| b. | | control unit | | | |
| c. | | disk drive | | | |
| d. | | bus | | | |

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| ANSWER: | | | | | | d |
| 18. A(n) | enabl | es communic | cation between a vi | deo card and memory. | | |
| | | a. | internal bus | | | |
| | | b. | keyboard | | | |
| | | c. | floppy drive | | | |
| | | d. | optical disc | | | |
| ANSWER: | | | | | | а |
| 19. A | is a peri | pheral device | for recording, stor | ring, and retrieving informati | ion. | |
| | | a. | disk drive | | | |
| | | b. | motherboard | | | |
| | | c. | control unit | | | |
| | | d. | processor | | | |
| ANSWER: | | | | | | а |
| 20. A(n) | is a c | ommunicatio | n interface through | n which information is transf | erred one bit at a time. | |
| | a. | serial port | | | | |
| | b. | parallel po | ort | | | |
| | c. | extended o | capability port | | | |
| | d. | enhanced | parallel port | | | |
| ANSWER: | | | | | | а |
| 21. A(n) | | | | nd a printer that enables the | computer to transfer multiple | e bits of |
| information | | inter simultan | | | | |
| | a. | paralle | _ | | | |
| | b. | serial p | | | | |
| | C. | | etic logic unit | | | |
| | d. | control | unit | | | |
| ANSWER: | | | | | | а |
| 22. Beginnin | ng in the | | generation compute | ers used | | |
| | a. | transistors | | | | |
| | b. | | be technology | | | |
| | c. | integrated | | | | |
| | d. | laser techr | nology | | | _ |
| ANSWER: | | | | | | b |
| 23. Second-g | generatio | n computers | used | | | |
| | a. | vacuum tu | be technology | | | |
| | b. | transistors | | | | |
| | c. | integrated | circuits | | | |
| | d. | laser techr | nology | | | |

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| ANSWER: | | | | b |
| 24. Third-gene | ration computers | s operated on | | |
| | a. integrat | ed circuits | | |
| | b. vacuum | tube technology | | |
| | c. parallel | processing | | |
| | d. optical | discs | | |
| ANSWER: | | | | а |
| 25. Which of the | he following stat | ements is true of galliur | n arsenide chips? | |
| a. | They run at high | er speeds than silicon c | hips. | |
| b. | They were used | in third-generation com | puters. | |
| c. | They are ideal for | or mass production. | | |
| d. | They have low p | roduction costs. | | |
| ANSWER: | | | | а |
| a. carb. carc. is s | nnot be used for a nnot emit light ar soft and fragile. | the mass production of and has speed limitations | electronic devices. | stead of silicon because silicon: |
| a. is e | expensive. | | | b |
| ANSWEN. | | | | Ь |
| 27. Gallium ars | senide tha | n silicon. | | |
| a. | is more fragil | e | | |
| b. | is more suital | ole for mass production | | |
| c. | emits less lig | ht | | |
| d. | operates at lo | wer temperatures | | |
| ANSWER: | | | | а |
| 28. mea | ns saving data in | computer memory. | | |
| | a. | Stream | | |
| | b. | Retrieval | | |
| | c. | Syndication | | |
| | d. | Storage | | |
| ANSWER: | | _ | | d |
| 29. In the conte | ext of storage me | easurements, a is | the size of a character | |
| 2). In the cont | a. | ** 1 1 | and size of a character. | |
| | b | | | |
| | c. | | | |
| | d. | • | | |
| ANSWER: | | | | С |

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| 30. The word computer consists of 64 bits | which is equivalent to bytes. | |
| a. | 6 | |
| b. | 8 | |
| c. | 16 | |
| d. | 32 | |
| ANSWER: | | b |
| 31. Every character, number, or symbol or | the keyboard is represented as a(n) _ | in computer memory. |
| a. decimal number | r | |
| b. hexadecimal nu | mber | |
| c. octal number | | |
| d. binary number | | |
| ANSWER: | | d |
| 32. Computers and communication system a. source b. nanotu c. data co d. servers ANSWER: | codes bes odes | between computers and network systems. |
| 33. In a(n) file, each alphabetic, numa. Extended Binary Code Decima b. Unicode c. American Standard Code for Ind. Extended ASCII ANSWER: | al Interchange Code (EBCDIC) | ed with a 7-bit binary number. |
| 34. An American Standard Code for Information | mation Interchange (ASCII) file define | es up to characters. |
| a. | 64 | 1 |
| b. | 128 | |
| c. | 256 | |
| d. | 1024 | |
| ANSWER: | | b |
| 35. An Extended ASCII data code allows | representation of maximum cha | aracters. |
| a. | 128 | |
| b. | 256 | |
| c. | 512 | |
| d. | 1024 | |
| ANSWER: | | b |

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| 36. A petabyte is equa | al to bytes. | | |
| 1 2 1 | a. | 230 | |
| | b. | 240 | |
| | c. | 250 | |
| | d. | 260 | |
| ANSWER: | | | С |
| 37. In the context of o | computer operations, divi | sion is a(n) | |
| a. | arithmetic operatio | | |
| b. | storage operation | | |
| c. | logical operation | | |
| d. | retrieval operation | | |
| ANSWER: | • | | а |
| | | | |
| | eal for notebook compute | rs because they | |
| | s space than a mouse | | |
| • • | ical scanning of the data | | |
| c. allow faste | r and more precise curson | positioning than a mouse | |
| d. rely on ligh | nt detection to determine | which menu item has been selected | |
| ANSWER: | | | а |
| 20 11 4:0 1 | | 11 11 | |
| | tage of a mouse over a tra processes more information | | |
| • | | | |
| | | ning the pointer than a trackball. | |
| | occupies less space than a | | |
| | s stationary, whereas a tra | ackball has to be moved around. | |
| ANSWER: | | | b |
| 40 Which of the follo | owing is an example of a | n input device? | |
| | barcode reader | imput device. | |
| | cathode ray tube | | |
| | in inkjet printer | | |
| | an organic light-emitting | diode | |
| ANSWER: | ar erganie inglie einiening | | а |
| 41. A is an inp | out device | | |
| | a. plasma displa | V | |
| | b. laser printer | , | |
| | c. data tablet | | |
| | d. inkjet printer | | |
| ANSWER: | a. mkjet primter | | С |
| - - | | | _ |
| 42. A(n) is an | input device used to grad | e multiple-choice and true/false tests. | |

| : | | : e: | |
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| a. | optica | al character reader | |
| b. | • | etic character sensor | |
| c. | | etic ink character recognition system | |
| d. | optica | al mark recognition system | |
| ANSWER: | | | d |
| 43. A(n) | is a co | ommon output device for soft copy. | |
| | a. | liquid crystal display | |
| | b. | floppy disk | |
| | c. | laser printer | |
| | d. | electrostatic plotter | |
| ANSWER: | | | а |
| 44. A(n) | is a co | ommon output device for hard copy. | |
| | a. | optical character reader | |
| | b. | compact disc | |
| | c. | laser printer | |
| | d. | plasma display | |
| ANSWER: | | | С |
| 45. Which of | the follo | owing statements is true of a high-quality inkjet printer? | |
| a. It use | es multic | color ink cartridges to print digital photographs. | |
| b. Its or | utput for | a mainframe computer is called soft copy. | |
| c. It use | es laser-l | based technology that creates electrical charges on a rotating drum to attract toner. | |
| d. It is s | suitable | for office environments that have high-volume and high-quality printing requirements. | |
| ANSWER: | | | а |
| 46. Which of | the follo | owing statements is true of laser printers? | |
| | | e most suitable for home users. | |
| | | e toners to create high-quality outputs. | |
| | • | s used to generate three-dimensional outputs. | |
| | • | e solid ink to generate two-dimensional outputs. | |
| ANSWER: | J | | b |
| 47 The Clink | ooard's c | contents are typically stored in . | |
| .,. The empe | a. | read-only memory | |
| | b. | random access memory | |
| | c. | magnetic disks | |
| | d. | magnetic tape | |
| ANSWER: | • | | b |
| | | | |

48. Which of the following is a difference between read-only memory (ROM) and random access memory (RAM)?

a. ROM is volatile memory, whereas RAM is nonvolatile memory.

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| b. ROM is: | secondary memory, whereas RAM is main memory. | |
| | nonvolatile memory, whereas RAM is volatile memory. | |
| | main memory, whereas RAM is secondary memory. | |
| ANSWER: | | С |
| | lowing is true of memory devices? | |
| | nts of flash memory cannot be reprogrammed. | |
| | nts of random access memory cannot be reprogrammed. | |
| | nts of programmable read-only memory cannot be reprogrammed. | |
| | nts of cache random access memory cannot be reprogrammed. | |
| ANSWER: | | С |
| | a when the computer is off or during the course of a program's operation. Random access memory | |
| | Read-only memory | |
| | decondary memory | |
| | Programmable read-only memory | |
| ANSWER: | regrammatic read only memory | С |
| 51. is an exar | mple of a secondary memory device. | |
| a. | An inkjet printer | |
| b. | An optical disc | |
| c. | Random access memory | |
| d. | Read-only memory | |
| ANSWER: | | b |
| 52. Which of the fol | lowing is true of magnetic tape? | |
| a. | It is made of metal. | |
| b. | It stores data sequentially. | |
| c. | It resembles compact discs. | |
| d. | It is a main memory device. | |
| ANSWER: | | b |
| | ad many (WORM) disc is a common type of | |
| | magnetic storage | |
| | optical storage | |
| | random access memory | |
| | compact disc read-only memory | _ |
| ANSWER: | | b |
| 54. In the context of | storage devices, CD-ROMs and DVDs are examples of | |
| a. | magnetic tape | |
| b. | magnetic disks | |

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| <u>Chapte</u> | er 02. C | Compute | rs: The Machines Behind Co | mputing | |
| | | c. | optical discs | | |
| | | d. | main memory devices | | |
| ANSW | 'ER: | | j | | С |
| 55. | allo | ws data t | be stored in multiple places | to improve a system's reliabi | lity. |
| | a. | | ote access server | 1 3 | |
| | b. | Netwo | rk-attached storage | | |
| | c. | Rando | m access memory | | |
| | d. | | ndant array of independent di | sks | |
| ANSW | 'ER: | | | | d |
| 56 | | ich is use | d for online storage and backt | ıp, involves multiple virtual s | servers that are usually hosted by third |
| - | | a. | Kernel storage | | |
| | | b. | Buffer storage | | |
| | | c. | Cache storage | | |
| | | d. | Cloud storage | | |
| ANSW | 'ER: | | | | d |
| 57. Idei | ntify the | e type of a. | computers that has the highes | t storage capability. | |
| | | b. | Notebooks | | |
| | | c. | Personal computers | | |
| | | d. | Supercomputers | | |
| ANSW | 'ER: | | 1 1 | | d |
| 58 Ide | ntify the | e tyne of | computers that has the highes | t nrice | |
| 50. raci | itily til | a. | Subnotebooks | , price. | |
| | | b. | Notebooks | | |
| | | c. | Personal computers | | |
| | | d. | Supercomputers | | |
| ANSW | 'ER: | | 1 1 | | d |
| | | following | server platforms will best ser | | ad some data from his office network. |
| | | a. | Remote access servers | | |
| | | b. | Web servers | | |
| | | c. | Application servers | | |
| 44014 | /CD: | d. | Disk servers | | |
| ANSW | EK: | | | | а |
| | | | ing best defines an operating grams for controlling and ma | • | nd software. |

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| c. It is a co | ollection of disl | the software for managing network resource drives used for fault tolerance and is typicard containing connectors for attaching ac | ically found in large network systems. |
| ANSWER: | | | a |
| | e following is to | rue of the control program of an operating rs in the OS. | system (OS)? |
| b. It co | ontrols interpre | ter programs in the OS. | |
| c. It ge | enerates assemb | oler programs for secondary memory. | |
| _ | enerates checks | ums to verify that data is not corrupted. | |
| ANSWER: | | | d |
| | e following is to ontrols compile | rue of the supervisor program of an operat | ing system (OS)? |
| b. It pr | rioritizes tasks j | performed by the CPU. | |
| c. It tra | ansfers data am | ong other parts of the computer system. | |
| d. It ge | enerates checks | ums to verify that data is not corrupted. | |
| ANSWER: | | | а |
| 63. The supervis | or program in | an operating system (OS) is also known as | s the |
| | a. | kernel | |
| | b. | metadata | |
| | c. | applet | |
| | d. | cache | |
| ANSWER: | | | а |
| 64. UNIX is a ty | rpe of . | | |
| j | | ge area network | |
| | b. appl | ication software | |
| | c. remo | ote access server | |
| | d. oper | ating system | |
| ANSWER: | | | d |
| 65 is used | d for drafting a | nd has replaced traditional tools, such as | Γ-squares, triangles, paper, and pencils. |
| a. | Graphics so | ftware | |
| b. | Project mar | agement software | |
| c. | Computer-a | ided design software | |
| d. | Presentation | software | |
| ANSWER: | | | С |
| 66 consis | sts of a series o | f 0s and 1s representing data or instruction | ns. |
| a. | Assembly | | |
| b. | A fourth-g | eneration language | |

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| | c. | Machine language | | |
| | d. | A fifth-generation lan | guage | |
| ANSWER |). | C | | С |
| 67. Java an | nd C++ aı | re examples of . | | |
| | a. | assembly langua | age | |
| | b. | high-level langu | - | |
| | c. | machine langua | ge | |
| | d. | compiler langua | | |
| ANSWER |). | | | b |
| 68. Which | of the fo | llowing is true of fourth | n-generation languages (4GLs)? | |
| | | he easiest computer lan | | |
| b. T | hey are c | omposed of rigorous co | ommand syntaxes. | |
| c. T | hey cont | ain a series of 0s and 1s | s representing data or instructions. | |
| d. T | hey use a | rtificial intelligence tec | chnologies, such as knowledge-based systems. | |
| ANSWER |). | | | а |
| 69. Structu | red quer | language (SQL) is an | example of a(n) | |
| | a. | assembly language | | |
| | b. | high-level language | | |
| | c. | fourth-generation lan | nguage | |
| | d. | fifth-generation lang | guage | |
| ANSWER |). | | | С |
| 70. Which | of the fo | llowing is true of fifth- | generation languages (5GLs)? | |
| a. T | hey are t | he easiest computer lan | iguages to use. | |
| b. T | hey cont | ain a series of 0s and 1s | s representing data or instructions. | |
| c. T | hey are r | nachine dependent and | need to be changed after every use. | |
| d. T | hey use a | rtificial intelligence tec | chnologies, such as knowledge-based systems. | |
| ANSWER |). | | | d |
| 71. To mak | ke a comp | outer understand a prog | ram, the source code must be first translated into code. | |
| | | a. | ASCII | |
| | | b. | object | |
| | | c. | ternary | |
| | | d. | UTF-8 | |
| ANSWER |). | | | b |
| 72. The _ | is th | e heart of a computer | | |
| | a. | main memory | | |
| | b. | basic input/output s | ystem | |
| | c. | central processing t | ınit | |

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| | d. | serial por | t | | |
| ANSWER: | | 1 | | | С |
| 73. The | tells | the compu | ter what to do, so | uch as instructing the compu | uter which device to read or send |
| output to. | | | | | |
| | a. | | ain memory | | |
| | b | | otherboard | | |
| | c. | _ | erating system | | |
| 44404455 | d | . co | ntrol unit | | |
| ANSWER: | | | | | d |
| 74 A(n) | is th | e enclosur | e containing the | computer's main componer | nts |
| / II / I(II) | — 13 th | | sk drive | comparer 5 main componer | |
| | b | | mputer chassis | | |
| | c. | | pansion slot | | |
| | d | | rallel port | | |
| ANSWER: | | 1 | 1 | | b |
| and optical to | a.b.c. | Second-gen Third-gener Fourth-gene | eration computers ration computers eration computers ation computers | | d |
| 77 1 1 | , 1 | 1 4 | | | |
| 76bit | ıs equai | | Six | | |
| | | а. b. | Eight | | |
| | | c. | Thirty-two | | |
| | | d. | Sixty-four | | |
| ANSWER: | | u. | Sixty Tour | | b |
| 77. A i | s an inp | out device | for computers. | | |
| | - | a. | mouse | ; | |
| | | b. | printer | • | |
| | | c. | monito | or | |
| | | d. | speake | er | |
| ANSWER: | | | | | а |
| 78. The most | commo | n type of m | ain memory is a s | emiconductor memory chip m | ade of |
| | | a. | arsenic | | |
| | | b. | germanium | | |

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| | | c. silicon | | |
| | | d. manganese | | |
| ANSWER: | | C | | С |
| 79. A(n) | , ma | nde of Mylar, is used for ra | andom-access processing of d | ata in a computer. |
| | | a. video adapter | | |
| | | b. optical disc | | |
| | | c. cassette tape | | |
| | | d. magnetic disk | | |
| ANSWER: | | | | d |
| 80. A(n) | , a m | nemory device, uses laser l | beams to access and store data | a. |
| | | a. video adapter | | |
| | | b. memory chip | | |
| | | c. optical disc | | |
| | | d. digital card | | |
| ANSWER: | | | | С |
| 81a | re comp | patible with the IBM Syste Minicomputers | m/360 line introduced in 196 | 5. |
| | b. | Mainframe computers | | |
| | c. | Personal computers | | |
| | d. | Super computers | | |
| ANSWER: | | - of or companies | | b |
| 82. A(n) | is a t | vpe of server that stores c | omputer software, which user | rs can access from their workstations. |
| | a | | r | |
| | b | . Web server | | |
| | C. | . application server | | |
| | d | . file server | | |
| ANSWER: | | | | С |
| 83. Corel Q | uattro Pr | o is an example of | | |
| | a. | word-processing software | | |
| | b. | spreadsheet software | | |
| | c. | database software | | |
| | d. | desktop publishing softwar | e | |
| ANSWER: | | | | b |
| 84. Microso | oft Power | Point is the most commonly | usedsoftware. | |
| | a. | desktop publishing | | |
| | b. | presentation | | |
| | c. | graphics | | |

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| ANSWER: | d. | project management | | | b |
| 85. Codes w | vritten fo | or one type of computer using | do not work on anothe | er type of computer. | |
| | a. | assembly language | | | |
| | b. | structured query language | | | |
| | c. | a fourth-generation language | | | |
| | d. | a fifth-generation language | | | |
| ANSWER: | | | | | а |

86. Provide a general description on how to write a computer program.

ANSWER:

Answers will vary. To write a computer program, first a user must know what needs to be done, and then he or she must plan a method to achieve this goal, including selecting the right language for the task. Many computer languages are available; the language the user selects depends on the problem being solved and the type of computer he or she is using.

87. Discuss single processor and multiprocessor computers.

ANSWER:

Answers will vary. Some computers have a single processor; other computers, called multiprocessors, contain multiple processors. Multiprocessing is the use of two or more CPUs in a single computer system. Generally, a multiprocessor computer performs better than a single-processor computer in the same way that a team would perform better than an individual on a large, time-consuming project.

88. Explain the effects of processor size and operating system (OS) on computer performance.

ANSWER:

Answers will vary. In recent years, 32-bit and 64-bit processors and OSs have created a lot of interest. A 32-bit processor can use 232 bytes (4 GB) of RAM; and, in theory, a 64-bit processor can use 264 bytes (16 EB, or exabytes) of RAM. So a computer with a 64-bit processor can perform calculations with larger numbers and be more efficient with smaller numbers; it also has better overall performance than a 32-bit system. However, to take advantage of this higher performance, you must also have a 64-bit OS.

89. What is a motherboard?

ANSWER:

Answers will vary. A motherboard is the main circuit board containing connectors for attaching additional boards. In addition, it usually contains the CPU, Basic Input/Output System (BIOS), memory, storage, interfaces, serial and parallel ports, expansion slots, and all the controllers for standard peripheral devices, such as the display monitor, disk drive, and keyboard.

90. Discuss the advantages and disadvantages of gallium arsenide chips.

ANSWER:

Answers will vary. Because silicon cannot emit light and has speed limitations, computer designers have concentrated on technology using gallium arsenide, in which electrons move almost five times faster than silicon. Devices made with this synthetic compound can emit light, withstand higher temperatures, and survive much higher doses of radiation than silicon devices. The major problems with gallium arsenide are difficulties in mass production. This material is softer and more fragile than silicon, so it breaks more easily during slicing and polishing. Because of the high costs and difficulty of production, the military is currently the major user of this technology. However, research continues to eliminate some shortcomings of this technology.

91. Describe how computer speed is measured.

ANSWER: Answers will vary. Typically, computer speed is measured as the number of instructions performed during

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the following fractions of a second:

a. Millisecond: 1/1,000 of a second

b. Microsecond: 1/1,000,000 of a second

c. Nanosecond: 1/1,000,000,000 of a second

d. Picosecond: 1/1,000,000,000,000 of a second

92. Explain how data is stored in a computer.

ANSWER:

Answers will vary. Computers can store vast quantities of data and locate a specific item quickly, which makes knowledge workers more efficient in performing their jobs. In computers, data is stored in bits. A bit is a single value of 0 or 1, and 8 bits equal 1 byte. A byte is the size of a character. For example, the word computer consists of 8 characters or 8 bytes (64 bits). Every character, number, or symbol on the keyboard is represented as a binary number in computer memory. A binary system consists of 0s and 1s, with a 1 representing "on" and a 0 representing "off," similar to a light switch.

93. Discuss the three basic tasks performed by computers.

ANSWER:

Answers will vary. Computers can perform three basic tasks: arithmetic operations, logical operations, and storage and retrieval operations.

Computers can add, subtract, multiply, divide, and raise numbers to a power (exponentiation), as shown in these examples:

A + B (addition): 5 + 7 = 12

A? B (subtraction): 5 - 2 = 3

A * B (multiplication): 5 * 2 = 10

A / B (division): 5 / 2 = 2.5

A $^{\land}$ B (exponentiation): $5 ^{\land} 2 = 25$

Computers can perform comparison operations by comparing two numbers. For example, a computer can compare x to y and determine which number is larger.

Computers can store massive amounts of data in very small spaces and locate a particular item quickly. For example, a person can store the text of more than one million books in a memory device about the size of his or her fist.

94. Describe touch screens.

ANSWER:

Answers will vary. A touch screen, which usually works with menus, is a combination of input devices. Some touch screens rely on light detection to determine which menu item has been selected, and others are pressure sensitive. Touch screens are often easier to use than keyboards, but they might not be as accurate because selections can be misread or mistouched.

95. What are the most common output devices for soft copy?

ANSWER:

Answers will vary. Output displayed on a screen is called "soft copy." The most common output devices for soft copy are cathode ray tube (CRT), plasma display, and liquid crystal display (LCD). Soon, OLED (organic light-emitting diode) displays will replace LCDs. OLED screens are brighter, thinner, and consume less power than LCD technology. However, they are more expensive than LCD technology.

96. What is the most common type of main memory?

ANSWER:

Answers will vary. The most common type of main memory is a semiconductor memory chip made of silicon. A semiconductor memory device can be volatile or nonvolatile. Volatile memory is called random access memory (RAM), although you could think of it as "read-write memory." In other words, data can be read from and written to RAM. Some examples of the type of information stored in RAM include open files, the Clipboard's contents, running programs, and so forth.

A special type of RAM, called cache RAM, resides on the processor. Because memory access from main

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RAM storage generally takes several clock cycles (a few nanoseconds), cache RAM stores recently accessed memory so the processor is not waiting for the memory transfer.

97. Describe the three main types of secondary memory devices.

ANSWER:

- Answers will vary. There are three main types of secondary memory devices: magnetic disks, magnetic tape, and optical discs.
- a. Magnetic disk: A magnetic disk, made of Mylar or metal, is used for random-access processing. In other words, data can be accessed in any order, regardless of its order on the surface. Magnetic disks are much faster but more expensive than tape devices.
- b. Magnetic tape: Magnetic tape, made of a plastic material, resembles a cassette tape and stores data sequentially. Records can be stored in a block or separately, with a gap between each record or block, called the interrecord gap (IRG). Magnetic tape is sometimes used for storing backups, although other media are more common now.
- c. Optical disc: Optical discs use laser beams to access and store data. Optical technology can store vast amounts of data and is durable. Three common types of optical storage are CD-ROMs, WORM discs, and DVDs.

98. Describe flash memory.

ANSWER:

Answers will vary. Flash memory is nonvolatile memory that can be electronically erased and reprogrammed. It is used mostly in memory cards and USB flash drives for storing and transferring data between computers and other devices.

99. Explain how a redundant array of independent disks (RAID) provides fault tolerance and improves performance.

ANSWER:

Answers will vary. A RAID system is a collection of disk drives used for fault tolerance and improved performance, and it is typically found in large network systems. With RAID, data can be stored in multiple places to improve the system's reliability. In other words, if one disk in the array fails, data is not lost. In some RAID configurations, sequences of data can be read from multiple disks simultaneously, which improves performance.

100. Briefly discuss different classes of computers.

ANSWER:

Answers will vary. Usually, computers are classified based on cost, amount of memory, speed, and sophistication. Using these criteria, computers are classified as subnotebooks, notebooks, personal computers, minicomputers, mainframes, or supercomputers. Supercomputers are the most powerful; they also have the highest storage capabilities and the highest price.

101. Briefly discuss fax servers, file servers, and mail servers.

ANSWER:

- Answers will vary. A server is a computer and all the software for managing network resources and offering services to a network.
- a. Fax servers: Fax servers contain software and hardware components that enable users to send and receive faxes.
- b. File servers: File servers contain large-capacity hard drives for storing and retrieving data files.
- c. Mail servers: Mail servers are configured for sending, receiving, and storing e-mails.

102. Describe desktop publishing software.

ANSWER:

Answers will vary. Desktop publishing software is used to produce professional-quality documents without expensive hardware and software. This software works on a "what-you-see-is-what-you-get" concept, so the high-quality screen display gives a user a good idea of what he or she will see in the printed output.

103. Describe financial planning and accounting software.

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ANSWER:

Answers will vary. Financial planning software, which is more powerful than spreadsheet software, is capable of performing many types of analysis on large amounts of data. These analyses include present value, future value, rate of return, cash flow, depreciation, retirement planning, and budgeting. A widely used financial planning package is Intuit Quicken. Using this package, you can plan and analyze all kinds of financial scenarios. In addition to spreadsheet software, dedicated accounting software is available for performing many sophisticated accounting tasks, such as general ledgers, accounts receivable, accounts payable, payroll, balance sheets, and income statements.

104. Describe assembly language.

ANSWER:

Answers will vary. Assembly language is the second generation of computer languages. It is a higher-level language than machine language but is also machine dependent. It uses a series of short codes, or mnemonics, to represent data or instructions. For example, ADD and SUBTRACT are typical commands in assembly language. Writing programs in assembly language is easier than in machine language.

105. Describe fifth-generation languages (5GLs).

ANSWER:

Answers will vary. Fifth-generation languages (5GLs) use some of the artificial intelligence technologies, such as knowledge-based systems, natural language processing, visual programming, and a graphical approach to programming. Codes are automatically generated and designed to make the computer solve a given problem without a programmer or with minimum programming effort. These languages are designed to facilitate natural conversations between a user and the computer. Imagine that the user could ask his or her computer, "What product generated the most sales last year?" The computer, equipped with a voice synthesizer, could respond, "Product X." Dragon NaturallySpeaking Solutions is an example of NLP. Research continues in this field because of the promising results so far.