|  |
| --- |
| True / False |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. There are two digits in the machine language system.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | |

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| 2. Assembly language requires a programmer to enter the program using 1s and 0s.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | |

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| 3. Mnemonics are a special number system used by assembly languages.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | |

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| 4. An interpreter translates all of a program’s high-level instructions into machine language before executing the program.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | |

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| 5. In object-oriented programming, an object can be used in more than one program; often with little to no modification.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | |

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| 6. The main reason why high-level langauges were a vast improvement over machine and assembly langagues is because they allow the programmer to use instructions that more closely resemble the English language.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | |

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| 7. There is one universal machine language used by computers.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | |

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| 8. A compiler translates instructions line by line as the program is running.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | |

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| 9. The selection structure is also referred to as an iteration.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | |

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| 10. The repetition structure has a true path and a false path.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | |

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| --- |
| Multiple Choice |

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| 11. How many different states do the switches in machine language have?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | 1 | b. | 2 | |  | c. | 8 | d. | 16 |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 12. C++, Visual Basic, C#, Python, and Java are all examples of what kind of language?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | assembly | b. | machine | |  | c. | programming | d. | mnemonic |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 13. What are program instructions written in 1s and 0s called?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | assembly language | b. | machine code | |  | c. | procedure-oriented code | d. | object-oriented language |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 14. What are program instructions that utilize mnemonics called?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | assembly code | b. | machine language | |  | c. | procedure-oriented language | d. | object-oriented code |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 15. What do programs written in assembly language require to convert the assembly language instructions into machine language?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | interpreter | b. | compiler | |  | c. | assembler | d. | converter |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 16. Which of the following is a language typically used to create procedure-oriented programs?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | C# | b. | Python | |  | c. | COBOL | d. | Java |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 17. With what type of program does the programmer focus on structures that represent screen elements such as check boxes and buttons or structures that represent real world items such as an employee or time card?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | assembly language | b. | machine language | |  | c. | procedure-oriented | d. | object-oriented |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 18. C++, Visual Basic, Java, and C# are examples of what type of language that can be used to create both procedure-oriented and object-oriented programs?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | assembly | b. | machine | |  | c. | compiler | d. | high-level |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 19. Which type of structure do all programs use?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | sequence | b. | selection | |  | c. | repetition | d. | variable |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 20. In a computer program, which type of logic structure directs the computer to process the program instructions one after another, in the order listed in the program?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | sequence | b. | selection | |  | c. | repetition | d. | variable |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 21. What is the name for the basic structure that controls the overall flow of a program's logic?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | procedure | b. | control | |  | c. | directional | d. | algorithmic |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 22. Which of the following is a set of step-by-step instructions that accomplish a task?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | algorithm | b. | mnemonic | |  | c. | heuristic | d. | loop |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 23. Which type of structure makes a decision based on one or more conditions?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | looping | b. | selection | |  | c. | iteration | d. | question |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 24. What type of structure is the following set of statements an example of?  if time-of-day is greater than noon     set afternoon access permissions  else     set regular access permissions  end if   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | iteration | b. | sequence | |  | c. | repetition | d. | selection |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 25. What type of structure is the following set of statements an example of?  while not end of file     read a line  end while   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | selection | b. | repetition | |  | c. | decision | d. | sequence |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 26. Which of the following translates all of a program’s high-level instructions before running the program?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | heuristic | b. | GUI | |  | c. | interpreter | d. | compiler |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 27. Which of the following translates program instructions line by line as the program is running?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | assembler | b. | algorithm | |  | c. | interpreter | d. | compiler |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 28. An accountant that is part of a programming team working on a program that requires accounting experience is an example of which of the following?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | drag | b. | subject matter expert | |  | c. | top-level coordinator | d. | engineer |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 29. After coding a program, the programmer should perform which task before releasing it to the user?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ask the user to approve the machine code | b. | write a user manual | |  | c. | assemble the program with an interpreter | d. | test the program with sample data |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 30. With whom should a programmer have extensive interaction before converting a solution to a problem into a computer program?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | user | b. | language developer | |  | c. | compiler vendor | d. | system engineer |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 31. What is the output of the following algorithm if AMOUNT is equal to $200?  If AMOUNT is greater than $500      print "That's too much."  Else if AMOUNT is greater than $200      print "Still too much"  Else if AMOUNT is greater than $100     print "That's about right"  Else      print "Amount is too low."  End if   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | That's too much | b. | That's about right | |  | c. | Still too much | d. | Amount is too low |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 32. The choice of whether to turn left or right at a fork in the road is an example of which type of structure?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | mnemonic | b. | sequence | |  | c. | decision | d. | iteration |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 33. What is another name for a repetition structure?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | loop structure | b. | sequence structure | |  | c. | decision structure | d. | algorithmic structure |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 34. Which structure do you use every time you drive your car and approach an intersection?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | iteration | b. | sequence | |  | c. | repetition | d. | selection |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 35. Which of the following is an example of an instruction written in assembly language?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | sum = num1 + num2 | b. | 0000 0101 1100 0000 | |  | c. | MUL bx, ax | d. | repeat 5 times |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 36. An example of an instruction written in machine language would be \_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | sum = num1 + num2 | b. | 0000 0101 1100 0000 | |  | c. | ADD bx, ax | d. | repeat 5 times |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 37. Which statement is an example of a repetition structure?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | if (Ginger is on the bench) | b. | repeat (2 times) | |  | c. | sit down | d. | walk forward |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| --- |
| Subjective Short Answer |

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| 38. In your own words, describe the terms programs, programmers, and programming languages. What are the key differences?   |  |  | | --- | --- | | *ANSWER:* | The directions given to a computer are called programs.  The people who write programs are called programmers.  Programmers use a variety of special languages, called programming languages, to communicate with the computer. | |

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| 39. What is the role of a subject matter expert on a programming team?   |  |  | | --- | --- | | *ANSWER:* | Programming teams often contain subject matter experts, who may or may not be programmers.  These individuals bring expertise to the type of program being written that the programmer may not possess.  For example, an accountant might be part of a programming team working on a program that requires accounting expertise. | |

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| 40. Is it necessary for the programmer to meet with the user?  Why or why not?  Explain your answer.   |  |  | | --- | --- | | *ANSWER:* | Absolutely.  The programmer will initially meet with the user to determine the exact problem and to agree on a solution.  After the programmer and user agree on the solution, the programmer begins converting the solution into a program.  During the conversion stage, the programmer meets periodically with the user to determine whether the program fulfills the user’s needs and to refine any details of the solution.  The creation of a good computer solution to a problem requires a great deal of interaction between the programmer and the user. | |

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| 41. What characterisitics do both computer programmers and software engineers share?   |  |  | | --- | --- | | *ANSWER:* | Programmers and software engineers need to have strong problem-solving and analytical skills, as well as the ability to communicate effectively with team members, end users, and other non-technical personnel. | |

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| 42. What are the primary differences between procedure-orinted programs and object-oriented programs?   |  |  | | --- | --- | | *ANSWER:* | With procedure-oriented programs the programmer concentrates on the major tasks that the program needs to perform.  With object-oriented programs the programmer focuses on the objects that the program can use to accomplish its goal. | |

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| 43. Give at least three examples of a procedure-oriented language, and at least three examples of an object-oriented language.   |  |  | | --- | --- | | *ANSWER:* | Procedure-oriented languages:  COBOL, BASIC, and C.  Object-oriented languages: C++, Visual Basic, Java, Python, and C#. | |

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| 44. What is the primary difference between a compiler and an interpreter?   |  |  | | --- | --- | | *ANSWER:* | A compiler translates all of a program’s high-level instructions before executing the program, whereas an interpreter translates the instructions line by line as the program is executing. | |

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| --- | --- | --- |
| 45. What are the three basic logic structures used by computer programs? Describe each.   |  |  | | --- | --- | | *ANSWER:* | Sequence, selection, and repetition.  You use the sequence structure each time you follow a set of step-by-step instructions, in order, from beginning to end.  The selection structure, also called the decision structure, indicates that a decision (based on some condition) needs to be made, followed by an appropriate action derived from that decision.  The repetition structure indicates that one or more instructions need to be repeated until some condition is met. | |