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| 1. A \_\_\_\_ is an input device.​   |  |  |  | | --- | --- | --- | |  | a. | ​scanner | |  | b. | ​keyboard | |  | c. | ​digital camera | |  | d. | ​printer |  |  |  | | --- | --- | | *ANSWER:* | a, b, c | | *REFERENCES:* | Introduction | |

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| 2. An application might allow data to be entered with a \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​scanner | |  | b. | ​mouse | |  | c. | ​digital camera | |  | d. | ​video camera |  |  |  | | --- | --- | | *ANSWER:* | a, b, c, d | | *REFERENCES:* | Basic Program Operations | |

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| 3. A \_\_\_\_ is an output device.​   |  |  |  | | --- | --- | --- | |  | a. | ​mouse | |  | b. | ​smartphone screen | |  | c. | ​keyboard | |  | d. | ​printer |  |  |  | | --- | --- | | *ANSWER:* | b, d | | *REFERENCES:* | Basic Program Operations | |

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| 4. A database is a collection of data organized in a manner that allows \_\_\_\_ of that data.​   |  |  |  | | --- | --- | --- | |  | a. | ​scanning | |  | b. | ​retrieval | |  | c. | ​access | |  | d. | ​use |  |  |  | | --- | --- | | *ANSWER:* | b, c, d | | *REFERENCES:* | Basic Program Operations | |

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| 5. Buttons for frequently used commands such as \_\_\_\_ are found on the Standard toolbar.​   |  |  |  | | --- | --- | --- | |  | a. | ​Open Project | |  | b. | ​Cut | |  | c. | ​Save | |  | d. | ​Paste |  |  |  | | --- | --- | | *ANSWER:* | a, b, c, d | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |
| ​ |
| 6.  \_\_\_\_ the physical equipment associated with a computer.​   |  |  |  | | --- | --- | --- | |  | a. | ​Computer hardware is | |  | b. | ​Computer software is | |  | c. | ​Computer programs are | |  | d. | ​Computer cables are |  |  |  | | --- | --- | | *ANSWER:* | a | | *REFERENCES:* | Introduction | |

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| 7. Both the program and the data must be placed in the \_\_\_\_ of computers in order for the computer to perform activities as directed by the program.​   |  |  |  | | --- | --- | --- | |  | a. | ​read only memory (ROM) | |  | b. | ​central processing unit (CPU) | |  | c. | ​CD-ROM | |  | d. | ​random access memory (RAM) |  |  |  | | --- | --- | | *ANSWER:* | d | | *REFERENCES:* | Introduction | |
|  |
| 8. Which item is a storage device?​   |  |  |  | | --- | --- | --- | |  | a. | ​RAM | |  | b. | ​Printer | |  | c. | ​System unit | |  | d. | ​Digital camera |  |  |  | | --- | --- | | *ANSWER:* | a | | *REFERENCES:* | Introduction | |

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| 9. Which item is an input device?​   |  |  |  | | --- | --- | --- | |  | a. | ​Printer | |  | b. | ​Smartphone screen | |  | c. | ​Digital camera | |  | d. | ​CPU |  |  |  | | --- | --- | | *ANSWER:* | c | | *REFERENCES:* | Introduction | |

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| 10. Which item is a processing device?​   |  |  |  | | --- | --- | --- | |  | a. | ​RAM | |  | b. | ​Hard drive | |  | c. | ​Scanner | |  | d. | ​System unit |  |  |  | | --- | --- | | *ANSWER:* | d | | *REFERENCES:* | Introduction | |

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| 11. In which order do most programs follow these general steps?​   |  |  |  | | --- | --- | --- | |  | a. | ​process data, accept input data, create output data | |  | b. | ​create output data, accept input data, process data | |  | c. | ​accept input data, process data, create output data | |  | d. | ​accept input data, create output data, process data |  |  |  | | --- | --- | | *ANSWER:* | c | | *REFERENCES:* | Introduction | |

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| 12. Data is said to be \_\_\_\_ if it remains available after the computer power is turned off.​   |  |  |  | | --- | --- | --- | |  | a. | ​persistent | |  | b. | ​volatile | |  | c. | ​fragmented | |  | d. | ​temporary |  |  |  | | --- | --- | | *ANSWER:* | a | | *REFERENCES:* | Introduction | |

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| 13. Most Visual Basic 2017 programs are \_\_\_\_ programs that communicate with the user through a graphical user interface (GUI).​   |  |  |  | | --- | --- | --- | |  | a. | ​GUI-based | |  | b. | ​indexed | |  | c. | ​event-driven | |  | d. | ​persistent |  |  |  | | --- | --- | | *ANSWER:* | c | | *REFERENCES:* | Introduction | |
|  |
| 14. A \_\_\_\_\_\_\_ consists of a window containing a variety of objects that can be displayed on various devices.​   |  |  |  | | --- | --- | --- | |  | a. | ​ROM | |  | b. | ​GUI | |  | c. | ​CPU | |  | d. | ​ERD |  |  |  | | --- | --- | | *ANSWER:* | b | | *REFERENCES:* | Introduction | |

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| 15. Tapping or clicking a button when a Visual Basic program is running triggers a(n) \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​index | |  | b. | ​radical | |  | c. | ​baseline | |  | d. | ​event |  |  |  | | --- | --- | | *ANSWER:* | d | | *REFERENCES:* | Introduction | |

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| 16. Users employ GUI objects to \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​select options | |  | b. | ​enter data | |  | c. | ​cause events to occur | |  | d. | ​all of the above |  |  |  | | --- | --- | | *ANSWER:* | d | | *REFERENCES:* | Introduction | |

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| 17. Addition and subtraction are considered to be \_\_\_\_ operations performed by a computer.​   |  |  |  | | --- | --- | --- | |  | a. | ​input | |  | b. | ​comparing | |  | c. | ​arithmetic | |  | d. | ​output |  |  |  | | --- | --- | | *ANSWER:* | c | | *REFERENCES:* | Basic Program Operations | |

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| 18. It is the ability of a computer to perform \_\_\_\_ operations that separates it from other types of calculating devices.​   |  |  |  | | --- | --- | --- | |  | a. | ​arithmetic | |  | b. | ​input | |  | c. | ​logical | |  | d. | ​output |  |  |  | | --- | --- | | *ANSWER:* | c | | *REFERENCES:* | Basic Program Operations | |

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| 19. A computer uses \_\_\_\_ operations to compare two values to see if they are equal to each other.​   |  |  |  | | --- | --- | --- | |  | a. | ​arithmetic | |  | b. | ​logical | |  | c. | ​grouping | |  | d. | ​sorting |  |  |  | | --- | --- | | *ANSWER:* | b | | *REFERENCES:* | Basic Program Operations | |

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| 20. A program can direct a computer to take alternative actions based on the results of \_\_\_\_ comparisons.​   |  |  |  | | --- | --- | --- | |  | a. | ​arithmetic | |  | b. | ​grouping | |  | c. | ​logical | |  | d. | ​sorting |  |  |  | | --- | --- | | *ANSWER:* | c | | *REFERENCES:* | Basic Program Operations | |

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| 21. A \_\_\_\_ is a collection of data organized in a manner that allows access, retrieval, and use of that data.​   |  |  |  | | --- | --- | --- | |  | a. | ​file | |  | b. | ​folder | |  | c. | ​program | |  | d. | ​database |  |  |  | | --- | --- | | *ANSWER:* | d | | *REFERENCES:* | Basic Program Operations | |

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| 22. The \_\_\_\_ of a programming language is the set of usage rules for that language.​   |  |  |  | | --- | --- | --- | |  | a. | ​logic | |  | b. | ​semantics | |  | c. | ​syntax | |  | d. | ​GUI |  |  |  | | --- | --- | | *ANSWER:* | c | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 23. A(n) \_\_\_\_ is a set of services and tools that enable a developer to code, test, and implement a single program or series of programs that comprise an application.​   |  |  |  | | --- | --- | --- | |  | a. | ​integrated development environment (IDE) | |  | b. | ​graphical user interface (GUI) | |  | c. | ​development studio | |  | d. | ​Microsoft Intermediate Language (MSIL) |  |  |  | | --- | --- | | *ANSWER:* | a | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 24. In the Visual Studio IDE, the \_\_\_\_ identifies the window and the application open in the window.​   |  |  |  | | --- | --- | --- | |  | a. | ​title bar | |  | b. | ​menu bar | |  | c. | ​index bar | |  | d. | ​property |  |  |  | | --- | --- | | *ANSWER:* | a | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 25. The \_\_\_\_ contains a list of commands that allow you to create, edit, save, print, test, and run a Visual Basic program.​   |  |  |  | | --- | --- | --- | |  | a. | ​menu bar | |  | b. | ​toolbar | |  | c. | ​Toolbox | |  | d. | ​Properties window |  |  |  | | --- | --- | | *ANSWER:* | a | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 26. The \_\_\_\_ of Visual Studio 2017 contains buttons for commands that are frequently used, such as Open Project, Save, Cut, Copy, Paste, and Undo.​   |  |  |  | | --- | --- | --- | |  | a. | ​menu bar | |  | b. | ​Standard toolbar | |  | c. | ​Toolbox | |  | d. | ​Properties window |  |  |  | | --- | --- | | *ANSWER:* | b | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 27. The \_\_\_\_ contains the .NET components that you can use to develop the GUI for a program.​   |  |  |  | | --- | --- | --- | |  | a. | ​menu bar | |  | b. | ​toolbar | |  | c. | ​Toolbox | |  | d. | ​Properties window |  |  |  | | --- | --- | | *ANSWER:* | c | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 28. Each control has \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​indices | |  | b. | ​properties | |  | c. | ​IDEs | |  | d. | ​tools |  |  |  | | --- | --- | | *ANSWER:* | b | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 29. A button or a text box are examples of objects, also called \_\_\_\_, that are a visible part of the GUI.​   |  |  |  | | --- | --- | --- | |  | a. | ​indices | |  | b. | ​classes | |  | c. | ​libraries | |  | d. | ​controls |  |  |  | | --- | --- | | *ANSWER:* | d | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 30. A \_\_\_\_ is an item that is a visible part of a GUI.​   |  |  |  | | --- | --- | --- | |  | a. | ​property | |  | b. | ​control | |  | c. | ​class | |  | d. | ​library |  |  |  | | --- | --- | | *ANSWER:* | b | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 31. \_\_\_\_ are the characteristics of objects in Visual Basic.​   |  |  |  | | --- | --- | --- | |  | a. | ​Methods | |  | b. | ​Functions | |  | c. | ​Identifiers | |  | d. | ​Properties |  |  |  | | --- | --- | | *ANSWER:* | d | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 32. The characteristics of GUI controls such as buttons and text boxes can be set using the \_\_\_\_ window in the Visual Studio IDE.​   |  |  |  | | --- | --- | --- | |  | a. | ​Characteristics | |  | b. | ​Attributes | |  | c. | ​Properties | |  | d. | ​Values |  |  |  | | --- | --- | | *ANSWER:* | c | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 33. Visual Studio Code is an IDE that supports \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​C++ | |  | b. | ​C# | |  | c. | ​Python | |  | d. | ​All of the above |  |  |  | | --- | --- | | *ANSWER:* | d | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 34. \_\_\_\_ is a language that can be used in Visual Studio.​   |  |  |  | | --- | --- | --- | |  | a. | ​Fortran | |  | b. | ​Visual F# | |  | c. | ​Lisp | |  | d. | ​COBOL |  |  |  | | --- | --- | | *ANSWER:* | b | | *REFERENCES:* | Programming Languages | |

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| 35. One of the most widely used programming languages in the world is \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​Pascal | |  | b. | ​BASIC | |  | c. | ​Fortran | |  | d. | ​Visual Basic |  |  |  | | --- | --- | | *ANSWER:* | d | | *REFERENCES:* | Programming Languages | |

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| 36. The \_\_\_\_ provides tools and processes developers can use to produce and run programs.​   |  |  |  | | --- | --- | --- | |  | a. | ​SQL Server Set | |  | b. | ​.NET Framework | |  | c. | ​Java Toolkit | |  | d. | ​both A and B |  |  |  | | --- | --- | | *ANSWER:* | b | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 37. All of the following are major features of the .NET Framework 4.6 EXCEPT \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​RAM | |  | b. | ​ADO.NET | |  | c. | ​the Common Language Runtime | |  | d. | ​ASP.NET |  |  |  | | --- | --- | | *ANSWER:* | a | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 38. A class \_\_\_\_ is a collection of classes that can be made available for developers to use.​   |  |  |  | | --- | --- | --- | |  | a. | ​glossary | |  | b. | ​library | |  | c. | ​index | |  | d. | ​roster |  |  |  | | --- | --- | | *ANSWER:* | b | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 39. The process of \_\_\_\_ is used to create an object from a class.​   |  |  |  | | --- | --- | --- | |  | a. | ​initialization | |  | b. | ​instantiation | |  | c. | ​objectification | |  | d. | ​classification |  |  |  | | --- | --- | | *ANSWER:* | b | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 40. \_\_\_\_ is an example of a set of prewritten classes that allows you to access data stored in a database.​   |  |  |  | | --- | --- | --- | |  | a. | ​ADO.NET | |  | b. | ​ASP.NET | |  | c. | ​RAD | |  | d. | ​CLR |  |  |  | | --- | --- | | *ANSWER:* | a | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 41. The process of using prebuilt classes to make application development faster, easier, and more reliable is called \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​RAD | |  | b. | ​CAD | |  | c. | ​ARD | |  | d. | ​CLR |  |  |  | | --- | --- | | *ANSWER:* | a | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 42. \_\_\_\_ computing is the connection of remote servers hosted on the Internet to store and process data, instead of storing the information locally on a personal computer or device.​   |  |  |  | | --- | --- | --- | |  | a. | ​Distance | |  | b. | ​Intangible | |  | c. | ​Indexed | |  | d. | ​Cloud |  |  |  | | --- | --- | | *ANSWER:* | d | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 43. Translating programming statements into instructions that can be understood by the electronics of the computer is accomplished by a process called program \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​instantiation | |  | b. | ​compilation | |  | c. | ​factoring | |  | d. | ​indexing |  |  |  | | --- | --- | | *ANSWER:* | b | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 44. The \_\_\_\_ reads the MSIL code and causes the instructions within the program to be executed.​   |  |  |  | | --- | --- | --- | |  | a. | ​CAD | |  | b. | ​RAD | |  | c. | ​CLR | |  | d. | ​ARD |  |  |  | | --- | --- | | *ANSWER:* | c | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 45. A Web application runs on a web server and produces \_\_\_\_ code that is downloaded to a client computer.​   |  |  |  | | --- | --- | --- | |  | a. | ​XML | |  | b. | ​SQL | |  | c. | ​HTML5 | |  | d. | ​HTTP |  |  |  | | --- | --- | | *ANSWER:* | c | | *REFERENCES:* | Types of Visual Basic 2017 Applications | |

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| 46. A computer program on a mobile device or Windows 8 or Windows 10 computer is also called an app.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | Introduction | |

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| 47. Computer hardware will perform its tasks automatically, regardless of whether a software program is running or not.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *REFERENCES:* | Introduction | |

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| 48. Many computer programs perform the following general steps: first accept input, then write output, and finally process the data, in that order.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *REFERENCES:* | Introduction | |

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| 49. Saving, or storing, data refers to placing the data or software electronically on a storage medium.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | Introduction | |

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| 50. In order for the computer to execute a program, both the program and the data must be placed in the computer’s random access memory (RAM).​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | Introduction | |

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| 51. Computer programs can be written in standard English.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *REFERENCES:* | Introduction | |

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| 52. A programming language is a set of words and symbols that can be interpreted by special computer software to create instructions that can be executed by a computer.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | Introduction | |

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| 53. A graphical user interface (GUI) is a special device for communicating with a user.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *REFERENCES:* | Introduction | |

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| 54. Tapping or clicking a button on a program screen causes an event to occur.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | Introduction | |

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| 55. A computer program can perform addition, subtraction, multiplication, and division operations on numeric data.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | Basic Program Operations | |

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| 56. Computers can compare numbers, letters of the alphabet, and special characters.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | Basic Program Operations | |

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| 57. A logical operation can be used to determine if two values are equal, if one value is greater than the other, or if one value is less than the other.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | Basic Program Operations | |

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| 58. If you write a computer program, and want to execute the same program many times without rewriting it each time, you must save the program on disk.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | Basic Program Operations | |

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| 59. A program can write data, but it cannot save data on disk.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *REFERENCES:* | Basic Program Operations | |

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| 60. Visual Basic 2017 is a programming language.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | Programming Languages | |

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| 61. Buttons for the .NET components used to develop the GUI are found on the Standard toolbar.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 62. The Solution Explorer contains the item you are currently developing.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 63. An object acts as a general template and a class is a specific item generated based on the object template.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 64. The .NET Framework 4.6.2 contains thousands of classes and many class libraries that can be used by Visual Basic developers.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 65. ADO.NET allows a program to examine data from a database but does not permit the program to update data in a database.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 66. ADO.NET is not part of the .NET Framework 4.6.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 67. Almost all of the objects available in the .NET framework, such as buttons, text boxes, and picture boxes, are available in ASP.NET.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 68. The use of MSIL and CLR offers multiple benefits that provide speed and flexibility for both the development and execution environments of a program.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 69. After the compiling process is complete and a program is ready for execution, the MSIL reads the CLR in RAM in a form that allows the computer’s CPU to execute the instructions in the program.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 70. Utmost among the benefits offered by MSIL and CLR is that a program written using Visual Studio 2017and compiled into MSIL can be executed on any computer using any operating system, as long as .NET Framework is available on the computer.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 71. The set of instructions that directs a computer to perform tasks is called computer hardware. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_​   |  |  | | --- | --- | | *ANSWER:* | False - software | | *REFERENCES:* | Introduction | |

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| 72. It is the ability of a computer to perform arithmetic operations that separates it from other types of calculating devices. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_​   |  |  | | --- | --- | | *ANSWER:* | False - logical | | *REFERENCES:* | Basic Program Operations | |

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| 73. The programming rules of a language are called its semantics. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_​   |  |  | | --- | --- | | *ANSWER:* | False - syntax | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 74. C++ is a language that is derived from the programming language C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_​   |  |  | | --- | --- | | *ANSWER:* | True | | *REFERENCES:* | Programming Languages | |

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| 75. The process of creating an object from a class template is called generation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_​   |  |  | | --- | --- | | *ANSWER:* | False - instantiation | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 76. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are people skilled in designing computer programs and creating them using programming languages.​   |  |  | | --- | --- | | *ANSWER:* | Developers​ | | *REFERENCES:* | Introduction | |

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| 77. Developers speak of developing a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which can mean several computer programs working together to solve a problem.​   |  |  | | --- | --- | | *ANSWER:* | application​ | | *REFERENCES:* | Introduction | |

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| 78. Operations, such as addition and subtraction, are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ operations.​   |  |  | | --- | --- | | *ANSWER:* | arithmetic​ | | *REFERENCES:* | Basic Program Operations | |

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| 79. Operations that allow two values to be compared are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ operations.   |  |  | | --- | --- | | *ANSWER:* | logical | | *REFERENCES:* | Basic Program Operations |   80. The usage rules of a programming language are called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the language.​   |  |  | | --- | --- | | *ANSWER:* | syntax​ | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | |

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| 81. Visual Studio 2017 is an example of a set of services and tools called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which allows a developer to code, test, and implement programs.​   |  |  | | --- | --- | | *ANSWER:* | integrated development environment  integrated development environment (IDE)  IDE  ​ | | *REFERENCES:* | Visual Basic and Visual Studio 2017 | |

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| 82. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in Visual Studio 2017 contains the .NET components that can be used in developing the GUI of a program.​   |  |  | | --- | --- | | *ANSWER:* | Toolbox​ | | *REFERENCES:* | Visual Basic and Visual Studio 2017 | |

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| 83. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ programming language is a synthesis of Visual Basic and C++.​   |  |  | | --- | --- | | *ANSWER:* | Visual C#​ | | *REFERENCES:* | Programming Languages | |

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| 84. When an object has been created from a class, we say that a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the class has been created.​   |  |  | | --- | --- | | *ANSWER:* | instance​ | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 85. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a named group of program code.​   |  |  | | --- | --- | | *ANSWER:* | class​ | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 86. An object is instantiated from a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.​   |  |  | | --- | --- | | *ANSWER:* | class​ | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 87. A class acts as a general template from which a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be created.​   |  |  | | --- | --- | | *ANSWER:* | object​ | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 88. The .NET Framework \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ contains thousands of classes.​   |  |  | | --- | --- | | *ANSWER:* | class library​ | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 89. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the set of prewritten classes in the .NET Framework 4.6.2 used in Visual Studio to work with databases.​   |  |  | | --- | --- | | *ANSWER:* | ADO.NET | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 90. ASP.NET is designed for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ technologies and server-side applications.​   |  |  | | --- | --- | | *ANSWER:* | cloud​ | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 91. When a program written in a Visual Studio 2017 programming language is compiled, the code is expressed in an intermediate language called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.​   |  |  | | --- | --- | | *ANSWER:* | Microsoft Intermediate Language  Microsoft Intermediate Language (MSIL)  MSIL  MSIL (Microsoft Intermediate Language) | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 92. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reads the MSIL code and causes the program instructions to be executed.​   |  |  | | --- | --- | | *ANSWER:* | ​  Common Language Runtime (CLR)  Common Language Runtime  CLR (Common Language Runtime)  CLR | | *REFERENCES:* | .NET Framework 4.6.2 | |

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| 93. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ application means the program will run on a computer or other device that supports the Windows GUI.​   |  |  | | --- | --- | | *ANSWER:* | ​Windows Classic Desktop | | *REFERENCES:* | Types of Visual Basic 2017 Applications | |

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| 94. You can create \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ apps that are designed to run on Windows 8 or Windows 10 computers and mobile devices such as smartphones and tablets.​   |  |  | | --- | --- | | *ANSWER:* | Windows Universal | | *REFERENCES:* | Types of Visual Basic 2017 Applications | |

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| 95. Visual Studio 2017 provides the tools required to develop three-dimensional augmented reality applications called \_\_\_\_\_\_\_\_\_\_\_\_ apps.   |  |  | | --- | --- | | *ANSWER:* | HoloLens​ | | *REFERENCES:* | Types of Visual Basic 2017 Applications | |

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| *Identify the letter of the choice that best matches the phrase or definition.*   |  |  | | --- | --- | | a. | ​hardware | | b. | event-driven​ | | c. | ​class library | | d. | logical​ | | e. | ​RAM | | f. | ADO.NET​ | | g. | ​syntax | | h. | persistent​ | | i. | ​.NET Framework 4.6.2 | | j. | Visual F# |  |  |  | | --- | --- | | *REFERENCES:* | 4 2 4 5 9-10 11 15 16 16 17 | | *REFERENCES:* | Introduction  Introduction  Introduction  Introduction  Basic Program Operations  Visual Basic 2017 and Visual Studio 2017  Visual Basic 2017 and Visual Studio 2017  .NET Framework 4.6.2  .NET Framework 4.6.2  .NET Framework 4.6.2 | | *QUESTION TYPE:* | Matching | |

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| 96. ​Where data must be placed in order to be processed   |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | |

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| 97. ​The physical equipment associated with a computer   |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | |

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| 98. ​Kind of data that remains available even after the computer is powered off   |  |  | | --- | --- | | *ANSWER:* | h | | *POINTS:* | 1 | |

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| 99. ​The kind of computer program that communicates interactively with the user through a graphical user interface   |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | |

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| 100. ​The kind of operations used to compare two values   |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | |

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| 101. ​The usage rules of a programming language   |  |  | | --- | --- | | *ANSWER:* | g | | *POINTS:* | 1 | |

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| 102. ​A multipurpose language similar to Visual Basic and C#   |  |  | | --- | --- | | *ANSWER:* | j | | *POINTS:* | 1 | |

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| 103. ​Available for all developers who need to use it   |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | |

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| 104. Provides tools and processes developers can use to process and run programs   |  |  | | --- | --- | | *ANSWER:* | i | | *POINTS:* | 1 | |

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| 105. ​Provides the tools for a program to examine data that was retrieved from a database   |  |  | | --- | --- | | *ANSWER:* | f | | *POINTS:* | 1 | |

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| 106. Define data, explain its three forms, and the general steps a computer performs related to data.​   |  |  | | --- | --- | | *ANSWER:* | Data includes words, numbers, videos, graphics, and sound that programs manipulate, display, and otherwise process. The basic function of many programs is to accept some form of data (sometimes called input data), manipulate the data in some manner (sometimes called processing), and create some form of data that is usable by people or other computers (sometimes called output data or information). In short, many computer programs perform the following general steps: accept input data, process the data, and create output data. The data that acts as input to a program, the processing that occurs, and the output that is created vary with the requirements of the program.​ | | *POINTS:* | 1 | | *REFERENCES:* | 3 | | *REFERENCES:* | Introduction | | *QUESTION TYPE:* | Essay | | *TOPICS:* | Critical Thinking | |

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| 107. Define syntax and explain its significance.​   |  |  | | --- | --- | | *ANSWER:* | Each program statement causes the computer to perform one or more operations. When written, these instructions must conform to the rules of the Visual Basic 2017 language. Coding a program is a precise skill. The developer must follow the syntax, or programming rules, of the programming language precisely. Even a single coding error can cause a program to execute improperly. Therefore, the developer must pay strict attention to coding an error-free program.​ | | *POINTS:* | 1 | | *REFERENCES:* | 12 | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | | *QUESTION TYPE:* | Essay | | *TOPICS:* | Critical Thinking | |

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| 108. Discuss at least four of the elements found in the Visual Studio 2017 window.​   |  |  | | --- | --- | | *ANSWER:* | The title bar identifies the window and the application open in the window.  ​  The menu bar displays the Visual Studio 2017 menu names. The menus contain lists of commands that allow you to create, edit, save, print, test, and run a Visual Basic program, and to perform other functions that are critical to the development of Visual Basic programs.  ​  The Standard toolbar contains buttons that execute frequently used commands such as Open Project, New Project, Save, Cut, Copy, Paste, and Undo.  ​  The Toolbox contains .NET components that you can use to develop the GUI for the program.  ​  The main work area contains the item you are currently developing.  ​  The Solution Explorer window displays the elements of the Visual Basic solution, which is the name for the Visual Basic program and other items generated by Visual Studio to help the program execute properly.  ​  An item that is a visible part of a GUI is called an object, or control. Each object in a Visual Basic program has a set of characteristics called the properties of the object. These properties can be set in the Properties window within Visual Studio.  ​ | | *POINTS:* | 1 | | *REFERENCES:* | 13-14 | | *REFERENCES:* | Visual Basic 2017 and Visual Studio 2017 | | *QUESTION TYPE:* | Essay | | *TOPICS:* | Critical Thinking | |

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| **Case 1-1**  ​As you prepare to bring one of the interns in your software development company to speed up the project on which you are working, you decide to create some illustrations of your programming to make certain key concepts clear to the intern. |

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| 109. Which of the following do you show your intern as an example of an event that a user might perform in the application you are creating?​   |  |  |  | | --- | --- | --- | |  | a. | ​powering on the computer | |  | b. | ​saving data to RAM | |  | c. | ​clicking a button | |  | d. | ​all of the above |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 5 | | *REFERENCES:* | Introduction | | *QUESTION TYPE:* | Multiple Choice | | *TOPICS:* | Critical Thinking | |  |  | |

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| 110. All of the following are examples, you could show your intern, of actions within event-driven programs EXCEPT \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​an account balance is shown when a button is clicked | |  | b. | ​a message appears on the screen in response to text entered by the user | |  | c. | ​the computer reboots spontaneously as the result of a head crash | |  | d. | ​a text box is reset when a Reset button is clicked |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6-7 | | *REFERENCES:* | Introduction | | *QUESTION TYPE:* | Multiple Choice | | *TOPICS:* | Critical Thinking | |  |  | |

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| **Case 1-2**  ​Visual Studio is new to you and you are trying to determine which of its languages is the best match for a couple of the projects on which you and your team are about to embark. |

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| 111. You are looking for a program that will be the most user-friendly for two of the junior members of your team, both of whom are new to programming. Which of the following is the best match?​   |  |  |  | | --- | --- | --- | |  | a. | ​Visual Basic | |  | b. | ​C++ | |  | c. | ​Visual C# | |  | d. | All of the above​ |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 14 | | *REFERENCES:* | Programming Languages | | *QUESTION TYPE:* | Multiple Choice | | *TOPICS:* | Critical Thinking | |  |  | |

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| 112. Steve and Shana on your team are looking for a language that will allow them to create an application that requires a high degree of control; they are not intimidated by complexity, as they have been programming for several years. Which of the following is the best match for them?​   |  |  |  | | --- | --- | --- | |  | a. | ​Visual Basic | |  | b. | ​Visual C# | |  | c. | ​C++ | |  | d. | ​Visual F# |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 15 | | *REFERENCES:* | Programming Languages | | *QUESTION TYPE:* | Multiple Choice | | *TOPICS:* | Critical Thinking | |  |  | |