1. What is an object in object-oriented programming (OOP)?

a) A blueprint for creating instances of classes
b) A collection of related variables and functions
c) An instance of a class
d) A method for data encapsulation

Answer: c) An instance of a class

Explanation: In OOP, an object is an instance of a class. It contains both data (variables) and methods (functions) that operate on that data.

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2. What is a class in object-oriented programming (OOP)?

a) A specific instance of an object
b) A collection of related variables and functions
c) A blueprint for creating objects
d) A method for inheritance

Answer: c) A blueprint for creating objects

Explanation: A class is a blueprint for creating objects. It defines the properties and behaviors (methods) that all objects of that type will have.

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3. What is data abstraction in OOP?

a) Hiding the internal implementation details of an object
b) Providing access to the internal implementation details of an object
c) Grouping related variables and functions into a single unit
d) Defining a hierarchy of classes

Answer: a) Hiding the internal implementation details of an object

Explanation: Data abstraction is the process of hiding the internal implementation details of an object and only showing the necessary features of the object to the outside world.

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4. What is data encapsulation in OOP?

a) Exposing the internal implementation details of an object
b) Hiding the internal implementation details of an object
c) Grouping related variables and functions into a single unit
d) Defining a hierarchy of classes

Answer: c) Grouping related variables and functions into a single unit

Explanation: Data encapsulation is the bundling of data (variables) and methods (functions)

that operate on the data into a single unit or class.

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5. What is inheritance in OOP?

a) The ability of a class to inherit properties and behaviors from another class
b) The process of creating multiple instances of a class
c) Hiding the internal implementation details of an object
d) Grouping related variables and functions into a single unit

Answer: a) The ability of a class to inherit properties and behaviors from another class

Explanation: Inheritance allows a class to inherit properties and behaviors (methods) from another class, promoting code reuse and the creation of hierarchical relationships between classes.

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6. What is polymorphism in OOP?

a) The ability to define multiple methods with the same name but different implementations
b) The process of creating multiple instances of a class
c) Hiding the internal implementation details of an object
d) Grouping related variables and functions into a single unit

Answer: a) The ability to define multiple methods with the same name but different implementations

Explanation: Polymorphism allows methods to be defined with the same name but different implementations, enabling flexibility and the ability to perform a single action in different ways.

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7. What is static binding in OOP?

a) Binding of methods at compile time
b) Binding of methods at runtime
c) The process of creating multiple instances of a class
d) Grouping related variables and functions into a single unit

Answer: a) Binding of methods at compile time

Explanation: Static binding (also known as early binding) refers to the binding of methods to their respective implementations at compile time.

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8. What is dynamic binding in OOP?

a) Binding of methods at compile time

b) Binding of methods at runtime
c) The process of creating multiple instances of a class
d) Grouping related variables and functions into a single unit

Answer: b) Binding of methods at runtime

Explanation: Dynamic binding (also known as late binding or runtime polymorphism) refers to the binding of methods to their respective implementations at runtime, based on the actual object being referred to.

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9. What is message passing in OOP?

a) The process of passing messages between objects to trigger methods
b) Binding of methods at compile time
c) Hiding the internal implementation details of an object
d) Grouping related variables and functions into a single unit

Answer: a) The process of passing messages between objects to trigger methods

Explanation: Message passing involves sending messages between objects to trigger methods, allowing objects to communicate and interact with each other in an OOP system.

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10. What are some benefits of OOP?

a) Code reusability, encapsulation, and abstraction
b) Code obfuscation, tight coupling, and data duplication
c) Procedural programming, static typing, and global variables
d) Code isolation, functional programming, and dynamic binding

Answer: a) Code reusability, encapsulation, and abstraction

Explanation: OOP provides benefits such as code reusability, encapsulation of data and methods, and abstraction of complex systems.

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11. What are some disadvantages of OOP?

a) Code reusability, encapsulation, and abstraction
b) Code obfuscation, tight coupling, and data duplication
c) Procedural programming, static typing, and global variables
d) Code isolation, functional programming, and dynamic binding

Answer: b) Code obfuscation, tight coupling, and data duplication

Explanation: Disadvantages of OOP include potential code obfuscation, tight coupling

between classes, and the possibility of data duplication.

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12. What are some common applications of OOP?

a) Web development, database management, and system administration
b) Machine learning, artificial intelligence, and natural language processing
c) Procedural programming, functional programming, and scripting
d) Software development, game development, and graphical user interfaces

Answer: d) Software development, game development, and graphical user interfaces

Explanation: OOP is commonly used in software development, game development, and creating graphical user interfaces (GUIs) due to its modularity and reusability.

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13. Which of the following statements best describes the anatomy of a program in OOP?

a) A program consists of objects interacting through message passing
b) A program consists of variables and functions grouped into classes
c) A program consists of a single class defining all functionalities
d) A program consists of multiple instances of classes interacting directly

Answer: b) A program consists of variables and functions grouped into classes

Explanation: In OOP, a program typically consists of variables and functions grouped into classes, with objects interacting through methods and message passing.

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14. What is the first step in creating a source file for an OOP program?

a) Writing the main function
b) Defining classes and their methods
c) Importing necessary libraries
d) Declaring variables

Answer: b) Defining classes and their methods

Explanation: The first step in creating a source file for an OOP program is typically defining classes and their methods, which form the building blocks of the program’s structure.

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15. What is the final step in the process of compiling and linking an OOP program?

a) Writing the main function
b) Defining classes and their methods
c) Importing necessary libraries
d) Creating the executable file

Answer: d) Creating the executable file

Explanation: The final step in the process of compiling and linking an OOP program is creating the executable file that can be run to execute the program.