C++ TEST-11 (ENCAPSULATION)

Total points 50/50

STUDENT NAME *

VIVA

✓ 1. **What is encapsulation in C++?** * 1/1

- (●) A) Wrapping data and functions together ✓
- ( ) B) Hiding implementation details
- ( ) C) Inheriting data from another class
- ( ) D) Overloading operators

✓ 2. **Encapsulation is also known as:** * 1/1

- ( ) A) Data binding
- ( ) B) Data hiding
- ( ) C) Data wrapping
- (●) D) Both A and C ✓

✓ 3. **Which OOP feature helps in implementing encapsulation?** * 1/1

- A) Inheritance
- B) Abstraction
- (●) C) Classes and Objects ✓
- D) Polymorphism

✓ 4. **Encapsulation ensures:** * 1/1

- (●) A) Security of data ✓
- B) Code reusability
- C) Function overloading
- D) Inheritance

✓ 5. **Which access specifier in C++ hides data from outside the class?** * 1/1

- A) public
- (●) B) private ✓
- C) protected
- D) global

✓ 6. **Which of these is an example of encapsulation?** * 1/1

- ○ A) Declaring global variables
- ◉ B) Using private data with public methods ✓
- ○ C) Using inline functions
- ○ D) Using macros

✓ 7. **Encapsulation is achieved in C++ by using:** * 1/1

- ◉ A) Access specifiers ✓
- ○ B) Control statements
- ○ C) Header files
- ○ D) Inheritance

✓ 8. **Which keyword is *not* used for encapsulation?** * 1/1

- ○ A) public
- ○ B) private
- ◉ C) goto ✓
- ○ D) protected

✓ 9. **What is the default access specifier for class members in C++?** * 1/1

- (●) A) private ✓
- ( ) B) public
- ( ) C) protected
- ( ) D) static

✓ 10. **Which of the following correctly defines a class with encapsulation?** * 1/1

- ( ) A) class Example {public:int x;};
- (●) B) class Example {private:int x;public:void setX(int a){ x = a; }int getX(){ return x; } ✓

✓ 11. **Data hiding in encapsulation is achieved using:** * 1/1

- (●) A) Private and protected access ✓
- ( ) B) Public access only
- ( ) C) Friend functions
- ( ) D) Constructors

✓ 12. **Which of these is NOT true about encapsulation?** * 1/1

- ( ) A) It protects data from direct modification
- (●) B) It allows direct access to all variables ✓
- ( ) C) It improves maintainability
- ( ) D) It ensures modular design

✓ 13. **Why is encapsulation used?** * 1/1

- ○ A) To combine data and functions
- ○ B) To protect data
- ○ C) To make code reusable
- ◉ D) Both A and B ✓

✓ 14. **Which of the following can access private members?** * 1/1

- ○ A) Only member functions
- ○ B) Friend functions
- ○ C) Derived classes
- ◉ D) Both A and B ✓

✓ 15. **The process of making data members private and providing access through public functions is known as:** *1/1

- ◉ A) Encapsulation ✓
- ○ B) Abstraction
- ○ C) Inheritance
- ○ D) Polymorphism

✓ 16. **Which function allows access to private data indirectly?** * 1/1

- (●) A) Setter and Getter ✓
- ( ) B) Constructor
- ( ) C) Destructor
- ( ) D) Virtual function

✓ 17. **Encapsulation is primarily used to:** * 1/1

- (●) A) Control data access ✓
- ( ) B) Increase program size
- ( ) C) Reduce class members
- ( ) D) Remove constructors

✓ 18. **In encapsulation, which members can be accessed from outside?** * 1/1

- ( ) A) Private
- (●) B) Public ✓
- ( ) C) Protected
- ( ) D) Static

✓ 19. **Which of these ensures that object data cannot be altered directly?** * 1/1

- ○ A) Public members
- ◉ B) Private members ✓
- ○ C) Protected members
- ○ D) Global variables

✓ 20. **Encapsulation promotes which programming principle?** * 1/1

- ○ A) Code redundancy
- ◉ B) Data hiding ✓
- ○ C) Memory leak
- ○ D) Open access

✓ 21. **What will happen if private members are accessed directly outside the class?** *1/1

- ○ A) Error at runtime
- ◉ B) Compile-time error ✓
- ○ C) Warning
- ○ D) Works normally

✓ 22. **Which of these allows controlled access to private data?** * 1/1

- (●) A) Getter and Setter ✓
- ( ) B) Macros
- ( ) C) Constructors
- ( ) D) Inheritance

✓ 23. **In C++, data abstraction is closely related to:** * 1/1

- ( ) A) Inheritance
- (●) B) Encapsulation ✓
- ( ) C) Virtual functions
- ( ) D) Arrays

✓ 24. **Which of the following is a benefit of encapsulation?** * 1/1

- ( ) A) Code security
- ( ) B) Data integrity
- ( ) C) Easier debugging
- (●) D) All of the above ✓

✓ 25. **Which of these cannot access private members directly?** * 1/1

- ○ A) Member functions
- ○ B) Friend functions
- ◉ C) Objects outside the class ✓
- ○ D) Constructors

✓ 26. **The keyword used to define a friend function is:** * 1/1

- ◉ A) friend ✓
- ○ B) private
- ○ C) extern
- ○ D) protected

✓ 27. **What is the output of accessing a private variable directly from main()?** *1/1

- ○ A) Prints value
- ◉ B) Compile error ✓
- ○ C) Run-time error
- ○ D) No output

✓ 28. **What is the main disadvantage of not using encapsulation?** * 1/1

- ○ A) Code becomes longer
- ◉ B) Data becomes insecure ✓
- ○ C) Functions become static
- ○ D) No constructors can be used

✓ 29. **What is the major advantage of encapsulation?** * 1/1

- ◉ A) Data is hidden from unauthorized access ✓
- ○ B) Code execution is faster
- ○ C) No need for functions
- ○ D) Memory is saved

✓ 30. **Encapsulation makes the code:** * 1/1

- ○ A) Unstructured
- ◉ B) Modular and maintainable ✓
- ○ C) Complex
- ○ D) Dependent

✓ 31. **Which of the following statements is TRUE?** * 1/1

- ○ A) Private members can be accessed only inside the same class
- ○ B) Public members can be accessed anywhere
- ○ C) Protected members can be accessed by derived classes
- ◉ D) All of the above ✓

✓ 32. **A class with all private data and public methods is an example of:** * 1/1

- ◉ A) Perfect encapsulation ✓
- ○ B) Incomplete encapsulation
- ○ C) Polymorphism
- ○ D) Data inheritance

✓ 33. **Which principle does encapsulation help achieve?** * 1/1

- ○ A) Security
- ○ B) Abstraction
- ○ C) Flexibility
- ◉ D) All of these ✓

✓ 34. **What is the function of access specifiers?** * 1/1

- (●) A) To restrict data access ✓
- ( ) B) To control loop flow
- ( ) C) To call constructors
- ( ) D) To overload operators

✓ 35. **In a well-encapsulated class, data members are usually:** * 1/1

- ( ) A) Public
- (●) B) Private ✓
- ( ) C) Protected
- ( ) D) Global

✓ 36. **Which of the following allows access to protected data?** * 1/1

- (●) A) Derived class ✓
- ( ) B) Unrelated class
- ( ) C) External functions
- ( ) D) None

✓ 37. **Which of these is a real-world example of encapsulation?** * 1/1

- ○ A) Steering a car using wheel
- ○ B) Typing on keyboard
- ○ C) ATM machine operations
- ◉ D) All of the above ✓

✓ 38. **What will happen if encapsulation is violated?** * 1/1

- ○ A) Data inconsistency
- ○ B) Security issues
- ○ C) Unpredictable behavior
- ◉ D) All of the above ✓

✓ 39. **In encapsulation, which functions are exposed to users?** * 1/1

- ◉ A) Only public ones ✓
- ○ B) Private ones
- ○ C) Protected ones
- ○ D) None

✓ 40. **Which keyword cannot be used as an access specifier?** * 1/1

- (●) A) static ✓
- ( ) B) private
- ( ) C) public
- ( ) D) protected

✓ 41. **Encapsulation reduces:** * 1/1

- ( ) A) Code readability
- (●) B) Complexity ✓
- ( ) C) Reusability
- ( ) D) Data security

✓ 42. **Which is true about encapsulated class design?** * 1/1

- (●) A) Implementation can be changed without affecting users ✓
- ( ) B) Data is globally accessible
- ( ) C) All variables are public
- ( ) D) None of the above

✓ 43. **Which of the following violates encapsulation?** * 1/1

- (●) A) Declaring all members public ✓
- ( ) B) Using private data
- ( ) C) Using getter/setter
- ( ) D) Using constructors

✓ 44. **Which member function provides read access to private data?** * 1/1

- ( ) A) Setter
- (●) B) Getter ✓
- ( ) C) Destructor
- ( ) D) Constructor

✓ 45. **Which member function provides write access to private data?** * 1/1

- (●) A) Setter ✓
- ( ) B) Getter
- ( ) C) Constructor
- ( ) D) Friend

✓ 46. **Encapsulation in C++ is implemented through:** * 1/1

- (●) A) Classes and objects ✓
- ( ) B) Functions only
- ( ) C) Operators
- ( ) D) Arrays

✓ 47. **Which type of class breaks encapsulation most often?** * 1/1

- (●) A) With global variables ✓
- ( ) B) With private members
- ( ) C) With public setters/getters
- ( ) D) None

✓ 48. **Which of these is *NOT* a benefit of encapsulation?** * 1/1

- ( ) A) Code readability
- ( ) B) Security
- (●) C) Memory optimization ✓
- ( ) D) Maintainability

✓ 49. **Encapsulation helps in achieving:** * 1/1

- ○ A) Modularity
- ○ B) Data hiding
- ○ C) Code security
- ◉ D) All of the above ✓

✓ 50. **In short, encapsulation means:** * 1/1

- ◉ A) Binding data and functions into one unit ✓
- ○ B) Splitting data across many classes
- ○ C) Making all members public
- ○ D) None of the above