

C++ TEST-19 (VIRTUAL FUNCTION)

Total points 50/50 

STUDENT NAME *

VIVA

 **1. What is a virtual function in C++? ***

1/1

- A) A function that can be called only inside the class
- B) A function that allows run-time polymorphism 
- C) A function that executes at compile-time
- D) A function declared with const

 **2. Which keyword is used to declare a virtual function? ***

1/1

- A) dynamic
- B) virtual 
- C) override
- D) base



✓ 3. Virtual functions are mainly used for: *

1/1

- A) Compile-time binding
- B) Run-time binding
- C) Static binding
- D) Overloading

✓

✓ 4. Virtual functions enable: *

1/1

- A) Function overloading
- B) Function overriding
- C) Function hiding
- D) Function templates

✓

✓ 5. Can constructors be virtual in C++? *

1/1

- A) Yes
- B) No

✓

✓ 6. Can destructors be virtual in C++? *

1/1

- A) Yes
- B) No

✓

✓ 7. Virtual functions must be: *

1/1

- A) Static
- B) Non-static

✓

✓ 8. What type of function is resolved at runtime? *

1/1

- A) Virtual function
- B) Inline function
- C) Friend function
- D) Static function

✓

✓ 9. Which table stores virtual function addresses? *

1/1

- A) Class table
- B) V-table
- C) Function table
- D) Runtime table

✓

✓ 10. Each object of a class containing virtual functions has a hidden pointer called:

*1/1

- A) Base pointer
- B) Virtual pointer (vptr)
- C) Function pointer
- D) Object pointer

✓

✓ 11. The concept of virtual functions is used to implement: *

1/1

- A) Data hiding
- B) Inheritance
- C) Polymorphism
- D) Abstraction

✓

✓ 12. What is the default type of function binding in C++? *

1/1

- A) Static binding
- B) Dynamic binding

✓

✓ 13. When does dynamic binding occur? *

1/1

- A) At compile-time
- B) At run-time

✓

✓ 14. A pure virtual function is defined as: *

1/1

- A) virtual void show() {}
- B) virtual void show() = 0;
- C) void show() = 0;
- D) static void show();

✓

✓ 15. A class containing at least one pure virtual function is called: *

1/1

- A) Abstract class
- B) Concrete class
- C) Virtual class
- D) Static class

✓

✓ 16. Can we create an object of an abstract class? *

1/1

- A) Yes
- B) No

✓

✓ 17. Can a pure virtual function have a body? *

1/1

- A) Yes
- B) No

✓

✓ 18. Can static functions be virtual? *

1/1

- A) Yes
- B) No

✓

✓ 19. Which function is invoked when deleting a derived object through a base pointer without virtual destructor? *1/1

- A) Derived destructor
- B) Base destructor only

✓

✓ 20. Why should destructors be declared virtual in base classes? * 1/1

- A) To save memory
- B) To ensure proper cleanup of derived class objects
- C) To make constructors virtual
- D) To improve performance

✓

✓ 21. Which of the following can be virtual? * 1/1

- A) Constructor
- B) Destructor
- C) Static function
- D) Friend function

✓

✓ 22. Which keyword ensures that a function in derived class overrides the base class version? *1/1

- A) virtual
- B) override
- C) static
- D) base

✓

✓ 23. Which keyword prevents further overriding of a virtual function? *

1/1

- A) stop
- B) final
- C) restrict
- D) end

✓

✓ 24. Virtual functions cannot be: *

1/1

- A) Friend functions
- B) Member functions

✓

✓ 25. Can we call a virtual function from a constructor? *

1/1

- A) Yes, always
- B) Yes, but it calls base class version
- C) No, compiler error

✓

✓ 26. When a base pointer points to a derived object and calls a virtual function, which function executes? *

1/1

- A) Base class version
- B) Derived class version

✓

✓ 27. The size of an object with virtual functions increases because of: * 1/1

- A) Virtual function definitions
- B) V-table pointer (vptr)

✓

✓ 28. If a derived class does not override a virtual function, which version *1/1 is used?

- A) Base class version
- B) Derived class version

✓

✓ 29. What is a vtable? * 1/1

- A) Table storing data members
- B) Table storing function addresses for virtual functions

✓

✓ 30. Which of the following cannot be declared as virtual? * 1/1

- A) Destructors
- B) Constructors

✓

✓ 31. What happens if a virtual function is not overridden in the derived class? *1/1

- A) Compiler error
- B) Base class function executes

✓

✓ 32. What happens if you call a pure virtual function directly from base class constructor? *1/1

- A) Derived version runs
- B) Base class version runs
- C) Runtime error

✓

✓ 33. Virtual functions achieve: * 1/1

- A) Early binding
- B) Late binding

✓

✓ 34. A function declared as virtual in base class and redefined in derived class is an example of: *1/1

- A) Function overloading
- B) Function overriding

✓

✓ 35. Can a non-virtual function be redefined in derived class? * 1/1

- A) Yes, but it causes function hiding
- B) No

✓

✓ 36. When you call a virtual function through an object (not a pointer), which version is called? *1/1

- A) Base
- B) Derived

✓

✓ 37. Virtual function mechanism uses: * 1/1

- A) Static binding
- B) Dynamic binding via vtable

✓

✓ 38. What is the base requirement to achieve polymorphism in C++? * 1/1

- A) Inheritance and virtual functions
- B) Operator overloading
- C) Function templates

✓

✓ 39. Which of the following statements is false about virtual functions? * 1/1

- A) They cannot be static
- B) They can be inline
- C) They cannot be friend
- D) They can be constructors

✓

✓ 40. What is a pure virtual function also called? *

1/1

- A) Abstract function
- B) Static function
- C) Virtualized function

✓

✓ 41. Virtual functions are resolved using: *

1/1

- A) Name mangling
- B) Virtual table lookup
- C) Operator overloading

✓

✓ 42. Which of the following results in an abstract class? *

1/1

- A) Having one or more pure virtual functions
- B) Having only constructors

✓

✓ 43. Which type of class cannot have virtual functions? *

1/1

- A) Template
- B) Union
- C) Structure

✓

✓ 44. Can a virtual function return an object? *

1/1

- A) Yes
- B) No

✓

✓ 45. Virtual functions help achieve which OOP feature? *

1/1

- A) Encapsulation
- B) Inheritance
- C) Polymorphism

✓

✓ 46. Can we have a virtual copy constructor? *

1/1

- A) Yes
- B) No

✓

✓ 47. Which statement about vtable is correct? *

1/1

- A) Each class with virtual functions has one vtable
- B) Each object has its own vtable

✓

✓ 48. What happens if you delete a derived class object using a base class pointer and the base destructor is not virtual? *1/1

- A) Both destructors called
- B) Only base destructor called

✓

✓ 49. Which of the following can be made pure virtual? *

1/1

- A) Destructors
- B) Constructors

✓

✓ 50. Which feature is most closely related to virtual functions? *

1/1

- A) Static binding
- B) Dynamic binding

✓

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