UNIVERSIDAD DE DAGUPAN

*SCHOOL OF INFORMATION TECHNOLOGY EDUCATION*

ITP03 | OBJECT ORIENTED PROGRAMMING

MIDTERM EXAM | SET C

**Instructions:** Name :

* Turn off your cell phone/s. Use of CP is not Year, Course & blk : Allowed during exam. Subject :
* Write ALL YOUR ANSWERS LEGIBLY. Date :
* Use black pen only. Strictly: **NO ERASURE**.
* READ and FOLLOW the DIRECTIONS carefully!

# PART I: MULTIPLE CHOICE (30 PTS)

*Direction: Write your answer before the number. (USE UPPERCASE ONLY)*

1. In PHP OOP, inheritance allows a class to:  
   a) Store multiple values in an array  
   b) Reuse the properties and methods of another class  
   c) Hide implementation details from the user  
   d) Convert code into machine language
2. The class being inherited from is also called the:  
   a) Derived class  
   b) Base or parent class  
   c) Interface class  
   d) Abstract class
3. The keyword to call a parent method inside a child class is:  
   a) super::  
   b) this::  
   c) parent::  
   d) base::
4. Which type of inheritance involves one base class and multiple child classes?  
   a) Single inheritance  
   b) Multilevel inheritance  
   c) Hierarchical inheritance  
   d) Multiple inheritance
5. Method overriding allows:  
   a) A child class to reuse parent methods without changes  
   b) A parent class to remove a child’s method  
   c) A child class to redefine a method from the parent class  
   d) PHP to compile faster
6. Inheritance promotes:  
   a) Code duplication  
   b) Code reuse and modularity  
   c) Slower runtime  
   d) Method hiding only
7. Which is **NOT** a valid type of inheritance in PHP?  
   a) Single  
   b) Multilevel  
   c) Hierarchical  
   d) Multiple (directly supported)
8. To extend, but not replace, a parent’s behavior you can use:  
   a) parent::methodName()  
   b) child::methodName()  
   c) super.method()  
   d) override()
9. What is the relationship between a derived class and a base class?  
   a) Derived is the parent of base  
   b) Base is independent of derived  
   c) Derived inherits from base  
   d) Derived and base are identical
10. Inheritance with constructors allows:  
    a) Preventing object creation  
    b) Calling a parent constructor within the child  
    c) Disabling method overriding  
    d) Creating abstract methods
11. Polymorphism means:  
    a) One class, one behavior  
    b) One interface, many behaviors  
    c) Many classes, one behavior  
    d) Static method binding only
12. Polymorphism is achieved mainly through:  
    a) Variables  
    b) Method overriding  
    c) Abstract keywords only  
    d) Constructors
13. Late static binding in PHP decides which method version to use:  
    a) At compile time  
    b) At runtime  
    c) During inheritance declaration  
    d) Before code execution
14. The phrase “many forms” refers to:  
    a) Abstraction  
    b) Encapsulation  
    c) Polymorphism  
    d) Inheritance
15. Which scenario best demonstrates polymorphism?  
    a) A variable stores a string  
    b) Different classes implement the same method name with unique logic  
    c) A constructor initializes properties  
    d) A parent class stores data
16. Late static binding allows:  
    a) Child methods to override even when called in parent code  
    b) Early method binding only  
    c) Prevention of overriding  
    d) Hiding static variables
17. Polymorphism allows code to be:  
    a) Less flexible  
    b) More flexible and extensible  
    c) Only usable in one class  
    d) Less reusable
18. In PHP, overriding methods in different classes with the same interface demonstrates:  
    a) Abstraction  
    b) Polymorphism  
    c) Encapsulation  
    d) Composition
19. The primary benefit of polymorphism is:  
    a) Reducing inheritance  
    b) Code duplication  
    c) Flexibility in method calls  
    d) Preventing interface usage
20. Polymorphism can also be described as:  
    a) A parent class using child methods at runtime  
    b) A method hiding mechanism  
    c) Static-only behavior  
    d) Class overloading only
21. Abstraction in OOP:  
    a) Hides unnecessary details and shows essential features  
    b) Duplicates code for clarity  
    c) Is the same as encapsulation  
    d) Disables method overriding
22. Abstract classes in PHP:  
    a) Cannot have methods with bodies  
    b) Provide a base structure and may have both normal and abstract methods  
    c) Are implemented directly without extension  
    d) Do not enforce method implementation
23. Interfaces in PHP:  
    a) May contain both methods and properties with bodies  
    b) Contain only method signatures  
    c) Cannot be implemented by multiple classes  
    d) Are used only for variables
24. Which keyword is used to declare an abstract class?  
    a) base  
    b) abstract  
    c) interface  
    d) parent
25. A class implementing an interface must:  
    a) Only implement some methods  
    b) Provide all methods defined in the interface  
    c) Override constructors only  
    d) Use multiple inheritance
26. Interfaces are different from abstract classes because:  
    a) Interfaces can contain implemented methods  
    b) Interfaces support multiple implementations in PHP  
    c) Abstract classes cannot have constructors  
    d) Interfaces hide variables only
27. The purpose of abstract classes is to:  
    a) Prevent all inheritance  
    b) Serve as templates for subclasses  
    c) Store unrelated constants  
    d) Replace interfaces completely
28. Abstraction focuses on:  
    a) How an object does its work  
    b) What an object does  
    c) Variable types  
    d) Static binding
29. Interfaces in PHP are defined using the keyword:  
    a) interface  
    b) abstract  
    c) implements  
    d) class
30. Abstraction and interfaces promote:  
    a) Code inconsistency  
    b) Tight coupling  
    c) Code consistency and flexibility  
    d) Avoiding code reuse

# PART 2: Coding (20PTS)

*Direction****:*** *Create a program that demonstrates inheritance using books. Follow these requirements:*

Create a **parent class** Book with properties title, author, and price, plus a displayInfo() method to show them.

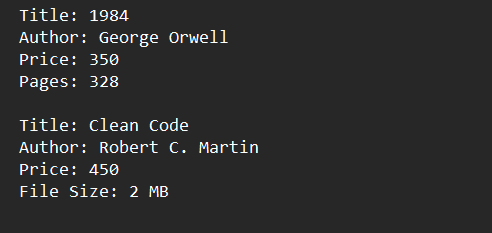
**Create a child class PrintedBook that inherits from Book**, adds a unique attribute NumberOfPages, calls the parent constructor, and overrides displayInfo() to include NumberOfPages.

**Create another child class EBook that inherits from Book**, adds a unique attribute fileSize (MB), calls the parent constructor, and overrides displayInfo() to include file size.

In your main program:

1. Create a PrintedBook with **"1984"**, **"George Orwell"**, **350**, **328 pages**.
2. Create an EBook with **"Clean Code"**, **"Robert C. Martin"**, **450**, **2 MB**.
3. Call displayInfo() for both objects.

**Expected Output:**



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