061306T4CPM

COMPUTER PROGRAMMING LEVEL 6

ICT/OS/CP/CR/06/6/A

Apply Object Oriented Programming Concepts Using JAVA

Mar/Apr 2025

TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION COUNCIL (TVET CDACC)

OBSERVATION CHECKLIST

INSTRUCTIONS TO ASSESSOR

1. Assess the candidate as the practical progresses observing the critical areas
2. You are required to mark the practical as the candidate perform the tasks
3. Ensure the candidate has a name tag and registration code at the back and front

Candidate's Name & Registration Code	
Assessors Name & Registration Code	
Venue of Assessment	
Date of Assessment	

Items to be Evaluated: *Please award marks as appropriate. Give a brief comment on your observation.*	**Marks Available**	**Marks Obtained**	**Comments**
TASK 1: Install Integrated Development Environment (IDE)			
1. Installed JDK and IDE *i. Installed the latest version of JDK* *ii. Installed Netbeans/Eclipse/DrJava IDE* *(Award 2 marks each)*	 **2** **2**		
2. Coded a Java program i. *Wrote a Java program that can be used to declare two integer variables and calculate their sum.* *ii. Displayed the result on the console.* *(Award 3 marks each)*	 **4** **2**		
Sub-Total 1	**10**		
TASK 2: Create Classes and Objects			
1. Designed and Implemented a Class *a. Created a class* `Student` *with the following attributes:* i. `name` *(String)* ii. `age` *(int)* iii. `grade` *(String)* b. Included the following methods: i. `displayDetails()`: Prints all student details. *(Award 3 marks each)*	 **3** **3**		
2. Created and manipulated objects *a. Instantiated three objects of the Student class and assigned values to their attributes.*	**3**		

(Award 1 mark each for correctly instantiated objects) b. *Called the **displayDetails()** method for each object.* *(Award 2 Marks)*	**2**		
3. Performed operations using Class Methods a. *Added a method updateGrade(String newGrade) to update a student's grade.* b. *Demonstrated its usage by updating and printing the grade for one of the Student objects.* *(Award 2 Marks each)*	**2** **2**		
Sub-Total 2	**15**		
TASK 3: Implement Inheritance			
1. Demonstrate Basic Inheritance a. *Created a base class Vehicle with attributes make, model, and year.* *(Award 1 Mark for each attribute)* b. *Added a method displayDetails() to print the vehicle details.* c. *Created a subclass Car that extends Vehicle and adds an attribute numberOfDoors.* *(Award 1 Mark each)*	**3** **1** **1**		
2. Applied Multi-level Inheritance **a.** *Extended the Car class to create a new class ElectricCar with an additional attribute batteryCapacity.* *(Award 2 Marks for correctly extended class)*	**2**		

b. *Created an object of ElectricCar and display all attributes using displayDetails().* ***c.*** *Added a Comment to explain the code (Award 2 Marks each)*	**2** **1**		
3. Overrode a Method *a.* *Added a method start() to the Vehicle class.* *b.* *Overrode the start() method in Car and ElectricCar classes with different implementations.* *c.* *Created objects of all three classes and call the start() method for each.* *(Award 2 marks each)*	**2** **2** **2**		
Sub-Total 3	**16**		
TASK 4: Implement Polymorphism			
1. Demonstrated Method Overloading *a.* *Wrote a class Calculator with an add() method. Overload the method to:* *i.* *Added two integers.* *ii.* *Added three integers.* *(Award 1 Mark each)*	**1** **1** **1**		
2. Demonstrate Method Overriding *i.* *Created a base class Shape with a method draw().* ii. *Extended it to Circle and Rectangle classes. Override the draw() method in each subclass with unique outputs.* *(Award 1 mark each)*	**1** **1**		

3. Polymorphism in Action *i. Created an array of Shape objects containing instances of Circle and Rectangle.* ii. *Used a loop to call the draw() method for each object, demonstrating polymorphism.* *(Award 2 Marks each)*	**2** **2**		
Sub-Total 4	**9**		
GRAND TOTAL	**50**		

ASSESSMENT OUTCOME

The candidate was found to be:

Competent ☐ Not yet Competent ☐

(Please tick as appropriate)

(The candidate is competent if the candidate obtains at least 50%)

Feedback from the Candidate:

Feedback to the Candidate:

Candidate Signature **Date:**

_____ _____

Assessor's Signature **Date**

_____ _____