



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi,**  
**Abuja**  
**FACULTY OF SCIENCES**  
**COMPUTER SCIENCE DEPARTMENT**  
**2020\_2 EXAMINATIONS**

**CIT 734: OBJECT ORIENTED TECHNOLOGY**

**Credit: 3 units**

**TIME ALLOWED:** 2½ Hours

**INSTRUCTION:** Answer Question 1 and any other FOUR (4) Questions

1. (a) Explain the following programming techniques: 3 marks
  - i. Procedural programming
  - ii. Modular programming
- (b) When can a class be referred to as an Abstract Class? 2marks
- 1(c) Explain the term “method” 2 marks
- 1(d) Briefly discuss the following: 6 marks
  - i. Polymorphism
  - ii. Inheritance
  - iii. Encapsulation
- 1(e) What does a Java-capable browser do when it encounters an <APPLET> tag? 2marks
- 1(f) Good Management is More Important than Good Technology. Explain 4marks
- 1(g) Write a C++ program to calculate the area of rectangle (3 marks)
- 2(a) The life cycle of a computer-based system exhibits distinct phases. Discuss (6marks)
- 2(b) Write a java function that adds three numbers together. 4marks
- 2(c) What does it mean for a programming language to be object oriented? 2marks
- 3(a) What does it mean for a programming language to be object oriented? 2marks
- 3 (b) Explain each line of the code below and state the expected output? (6marks)
- 3(c) The Data Flow Diagram (DFD) is a diagramming notation that depicts the flow of data through the system and identifies the processes that manipulate the data. Draw a DFD to query a database and print a sorted list of the items retrieved by the database. (4 marks)
- 4(a) Write a java code to print the product of two numbers x and y 6marks
- 4(b) (b) Debug the lines of code below 6marks

```
1: int a=0, b=0, x=0, y=35;

2 : cout << "a: << a << " b : " << b;

3: cout << " x: " x << " y: " << y << endl;

4: a = 9;

5: b = 7;

6: y=a+b

7: cout << "a: " << a << " b: " << b;
```

5(a) Write a java applet to that draws the string "Hello world!" at location (50,25) 4marks

5(b) Write the HTML code to run the Applet in (i) 4marks

5(c) List the two views of Object-Oriented design 4marks

6(a) What will be the output of the code below ? 6marks

```
public class ArithmeticDemo {
    public static void main(String[] args) {
        //a few numbers
        int i = 37;
        int j = 42;
        double x = 27.475;
        double y = 7.22;
        System.out.println("Variable values...");
        System.out.println (" i = " + i);
        System.out.println (" j = " +j);
        System.out.println (" x = " +x);
        System.out.println (" y = " +y);
        // adding numbers
        system. Out. Println {" Adding ... "};
        system. Out. Println {" i + j = " + ( i + j));
        system. Out. Println (" x + y = " + ( x + y));
        //subtracting number
        system . out. Println (" Subtracting ...");
        System,. Out println (" i - j = " + ( i - j ));
        System. Out. Println (" x -y = " + ( x - y));
        //multiplying numbers
        System.out.println("Multiplying...");
        System.out.println(" i * j = " + ( i * j));
        System.out.println(" x * y = " + ( x * Y));
        //dividing numbers
        System.out.println("Dividing...");
        System.out.println(" i / j = " + (i/j));
        System.out.println(" x / y = " + (x/y));
    }
}
```

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