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# Fourth Semester B.E. Degree Examination, July/August 2022
## Object Oriented Concepts

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

## Module-1

1    a.  List the difference between procedure oriented program and object oriented program.
**(06 Marks)**
     b.  What is data abstraction? Explain how it is implemented in C++ with suitable example.
**(08 Marks)**
     c.  What is function overloading in C++? Write a C++ program to overload a function area( ) to find the area of circle and rectangle. **(06 Marks)**

### OR

2    a.  Define friend function in C++. Explain with suitable example. **(06 Marks)**
     b.  What is a constructor? List the different types of constructors and explain parameterized constructors with suitable example. **(08 Marks)**
     c.  What are static members of a class? Write a C++ program to count the number of objects created. **(06 Marks)**

## Module-2

3    a.  List and explain the java buzz words. **(08 Marks)**
     b.  Explain the "for-each" loop in java and discuss how it is different from "for" loop. **(06 Marks)**
     c.  Write a java program to initialize an array of 5 elements {12, 25, 42, 35, 65}; and display the sum and average of the numbers. **(06 Marks)**

### OR

4    a.  List the different types of operators. Explain any three operators with suitable examples.
**(08 Marks)**
     b.  Demonstrate the difference between break and continue statement with suitable example.
**(06 Marks)**
     c.  Explain type conversion in java with suitable examples. **(06 Marks)**

## Module-3

5    a.  Explain how multiple inheritance is implemented in java with suitable examples. **(06 Marks)**
     b.  Differentiate method overloading and overriding in java with suitable examples. **(08 Marks)**
     c.  Explain "super", "this" and "final" keywords with suitable examples. **(06 Marks)**

### OR

6    a.  What is exception handling? Explain with suitable example. **(06 Marks)**
     b.  Define package in java. Explain how an user-defined package is created with examples.
**(06 Marks)**
     c.  Describe the various levels of access protection available for packages. **(08 Marks)**

## Module-4

**7**  a.  Define multithreading in Java. Explain the two methods for creating threads with examples. **(08 Marks)**

   b.  What is the need of synchronization? Explain how synchronization is implemented in Java. **(06 Marks)**

   c.  Write short notes on "adapter class". **(06 Marks)**

## OR

**8**  a.  Explain with example, the Delegation Event Model. **(08 Marks)**

   b.  What is Event Listener Interface? Explain the MouseListener interface with the general forms of their methods. **(06 Marks)**

   c.  Explain the Event class and list any 6 commonly used Event classes in Java. **(06 Marks)**

## Module-5

**9**  a.  What is an applet? Explain the lifecycle of an applet. **(08 Marks)**

   b.  Describe the two key features of swings. **(06 Marks)**

   c.  Explain getDocumentbase and getCodebase in Applet class. **(06 Marks)**

## OR

**10**  a.  Explain components and containers in swing. **(06 Marks)**

   b.  Explain JLabel and JButton class. **(08 Marks)**

   c.  Write a swing program to display a JTextField and as the user presses the ENTER key, the contents in the text field will be displayed in the status bar. **(06 Marks)**

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