

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. Explain the concept of object oriented programming language. (06 Marks)
- (i) Encapsulation
 - (ii) Polymorphism
 - (iii) Inheritance
- b. What is an inline function? What are the advantages of inline functions? Write a C++ program to find minimum of two numbers using inline function. (08 Marks)
- c. Define a friend function. Illustrate with an example. (06 Marks)

OR

- 2 a. Why friend functions are required? Write a C++ program to illustrate the use of friend function. (06 Marks)
- b. What is function overloading? Write a C++ program to swap two integers by function overloading. (08 Marks)
- c. Explain instance variable hiding. Explain with example how to overcome instance variable hiding. (06 Marks)

Module-2

- 3 a. What are constructors and destructors? Explain default constructors with example. (08 Marks)
- b. Illustrate with an example the order of calling constructor and destructor. (08 Marks)
- c. Explain namespaces with example. (04 Marks)

OR

- 4 a. Explain the following : Java buzzwords, Object oriented, Robust, Multi-threaded, Architecture neutral. (08 Marks)
- b. Write a Java program to find the sum of even numbers using for each version of for loop and print the result. (06 Marks)
- c. Explain labelled break and labelled continue with examples. (06 Marks)

Module-3

- 5 a. Explain general form of a class with example. (06 Marks)
- b. Write a Java program to implement stack of integers. Provide constructors and methods to push an element, POP an element and display the contents of the stack. (14 Marks)

OR

- 6 a. Explain multilevel inheritance with an example. (06 Marks)
- b. Explain exception handling mechanism provided in Java. Give syntax. Write a Java program to demonstrate exception handling construct. (08 Marks)
- c. Write a Java program to create user defined exception and demonstrate its use. (06 Marks)

Module-4

- 7 a. Explain the steps to create a package in Java with an example.
 b. Explain interfaces in Java with example.
 c. Can interfaces be inherited? Justify with an example.

(08 Marks)

(06 Marks)

(06 Marks)

OR

- 8 a. Explain the following methods of Thread class, getName (), getPriority (), isAlive (), join ().
 b. Write a Java program to illustrate thread creation using Runnable interface.
 c. Write a Java program to illustrate synchronization using synchronized methods.

(08 Marks)

(06 Marks)

(06 Marks)

Module-5

- 9 a. What are events, event listener and event source. Explain delegation event model used to handle events in Java.
 b. Write a Java program to handle mouse dragged and mouse moved events.
 c. Explain Adapter class with example.

(07 Marks)

(07 Marks)

(06 Marks)

OR

- 10 a. Explain the following with examples :
 (i) JLabel (ii) JTextField
 b. Write a Java program to create a button, on clicking which displays "Welcome to VTU".
 c. Write a Java program to create a table with column heading as FirstName, LastName, Age. Insert at least 3 records in the table, and display.

(04 Marks)

(06 Marks)

(10 Marks)