USN ☐☐☐☐☐☐☐☐☐☐   **18CS45**

Fourth Semester B.E. Degree Examination, Jan./Feb. 2021
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 differences between procedure oriented programming and object oriented programming. **(05 Marks)**
   b. Explain how one can bridge two classes using friend function. Write a C++ program to find sum of two numbers in two different class using friend function add( ). **(08 Marks)**
   c. Write a C++ program to demonstrate default arguments and explain its merits compared to function overloading. **(07 Marks)**

OR

2 a. Define a class. Explain the syntax of class declaration in C++ with suitable example. **(07 Marks)**
   b. Implement a C++ program to find area of rectangle (Area = base $*$ height), area of circle (Area = $\pi * r^2$) and area of triangle (Area = $1/2 *$ base $*$ height) using function overloading concept. Call these function from main( ) with suitable inputs. **(07 Marks)**
   c. With an example program, explain the use of constant member function and mutable data member. **(06 Marks)**

Module-2

3 a. Can you overload constructor and destructor? Justify your answer with suitable example. **(07 Marks)**
   b. Implement a C++ program to create a class called 'Employee' which contains 'name', 'designation', 'empid' and 'basicSalary' as data members and read( ) and write( ) member functions. Using this class, read and write five employee information from main( ) method. **(07 Marks)**
   c. List and explain Java buzzwords. **(06 Marks)**

OR

4 a. Explain namespace in C++ with suitable example. How do name space help in preventing pollution of global name space? **(06 Marks)**
   b. Write a Java program to read n elements using array and a key elements to search. Perform linear search operation using 'for each' statement and print suitable message for successful and unsuccessful search. **(06 Marks)**
   c. Write a note on:
       i)   Type casting
       ii)   Short circuit operator
       iii) >> and >>> **(08 Marks)**

Module-3

5 a. Define inheritance. List and explain different types of inheritance available in Java.
   (07 Marks)
   b. Distinguish between over loading and method overriding in Java with example. **(06 Marks)**
   c. Write a Java program to implement a stack operation that holds 5 integer elements.
   (07 Marks)

OR

6 a. Define exception. Explain exception handling in Java with example program. **(06 Marks)**
   b. Discuss following terms with suitable example: i) this   ii) super. **(06 Marks)**
   c. Explain dynamic method dispatch in Java with example program. **(08 Marks)**

Module-4

7 a. Define a package. Explain how to create user defined package with example. **(05 Marks)**
   b. Write a Java program to create two threads, one thread displays "VTU" and other thread displays "Belagavi" on the screen continuously. **(07 Marks)**
   c. Illustrate with an example the use of isAlive( ) and join( ) method. **(08 Marks)**

OR

8 a. Define a thread. List out the differences between multiprocess and multithread concepts.
   (05 Marks)
   b. Write a Java program to implement Producer-Consumer problem using thread. **(10 Marks)**
   c. Discuss the different use of synchronization in Java with example. **(05 Marks)**

Module-5

9 a. Explain delegation event model in Java. **(06 Marks)**
   b. Write a Java program to handle mouse event. **(07 Marks)**
   c. Create a swing applet that has two buttons named as "CSE" and "ISE". When either of the button is pressed, it should display "CSE" is pressed" and "ISE is pressed" respectively.
   (07 Marks)

OR

10 a. Explain briefly the components and containers used in swings. **(06 Marks)**
   b. Write a swing program to create a table with column heading as StudentName, USN, Address and insert 5 records into the table and display on screen. **(10 Marks)**
   c. Explain KeyEvent class. **(04 Marks)**

* * * * *