USN ☐☐☐☐☐☐☐☐☐☐   **15CS45**

Fourth Semester B.E. Degree Examination, July/August 2021
Object Oriented Concepts

Time: 3 hrs.   Max. Marks: 80

Note: *Answer any FIVE full questions.*

1   a. Define structure. Explain the syntax for structure definition and declaration. Write a C++ program to create new user-defined data type using structure.   **(08 Marks)**
    b. Difference between Procedure Oriented Programming (POP) and Object Oriented Programming (OOP).   **(05 Marks)**
    c. Explain how console Input/Output is achieved in C++ with an example.   **(03 Marks)**

2   a. What is function overloading? Write a C++ program to implement function overloading.   **(05 Marks)**
    b. Define Namespace in C++. How do you resolve the name conflicts using namespace with an example?   **(05 Marks)**
    c. What is friend function? Write a C++ program to implement the friend function.   **(06 Marks)**

3   a. Explain how Java program solve both security and portability problems.   **(05 Marks)**
    b. Describe type-conversion and casting in Java with an example program.   **(06 Marks)**
    c. Define short circuit logical operators. Write a Java program to implement the same operators.   **(05 Marks)**

4   a. Explain the features / Buzzwords of Java.   **(08 Marks)**
    b. Define and represent the syntax for for-each version of for loop. Write a Java program to read elements of an array and compute sum of array elements by using for-each.   **(08 Marks)**

5   a. Define class and object in Java with syntax. Write a Java Program to implement the class and object to compute sum and average of three integer input.
       [Consider class-name as Demo with 2 method called sum( ) and average ( ) followed by an object called CS. Main classname is sample]   **(08 Marks)**
    b. Define constructor. List the different types of constructor. Explain any one constructor with an example.   **(05 Marks)**
    c. Define the following with syntax:
       (i)   this keyword
       (ii)   super keyword.   **(03 Marks)**

6   a. Define inheritance in Java. Write a java program to implement multi-level inheritance for banking applications, consists of members like saving_account, fixed_deposit and account_number by the class-name Bank for main method and bank details.   **(08 Marks)**
    b. What is method overriding? Write a java program to implement method overriding.   **(04 Marks)**
    c. Define package and list the basic packages in Java. Explain the process of creating, accessing and using of user-defined package with an example.   **(04 Marks)**

7 a. What is thread? Explain the creation of thread in Java by using runnable interface with an example. **(05 Marks)**

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

c. What is meant by thread priority? How it is assigned? **(05 Marks)**

8 a. What is delegation model? Describe the significance of adaptor class with example. **(05 Marks)**

b. List different event Listener interfaces and explain any two with its method (syntax). **(05 Marks)**

c. Write a short note on :
   (i) ActionEvent Class and AdjustmentEvent Class.
   (ii) WindowListener and WindowAdaptor **(06 Marks)**

9 a. What is applet? What are the types of applet and explain the skeleton of applet. **(06 Marks)**

b. Explain HTML applet tag with example. **(05 Marks)**

c. Explain the various component and containers in swings. **(05 Marks)**

10 a. Write an applet program to create label called "JAVA" of text field with 4 check boxes consists of caption:
   (i)   this
   (ii) super
   (iii) package.
   (iv) Exception **(06 Marks)**

b. Write the steps to create J-table. Write a program to create a table with column heading "User-name, id, age" and insert atleast 5 records in the table and display. **(05 Marks)**

c. Write swing program to demonstrate with two JButtons names CSI and ISI. When either of these button entered, it should display respective label with its icon. Image icons are "CS.JPG" and "IS.JPG". Set initial label as "enter the input". **(05 Marks)**

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