

# CBCS SCHEME



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17CS42

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

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions.*

- 1 a. Bring out the differences between procedure oriented programming and object oriented programming. (05 Marks)  
b. Define function polymorphism. Write a program in C++ using function overloading area( ) to calculate area of circle (area =  $\pi r^2$ ), area of triangle ( $1/2 * \text{base} * \text{height}$ ) and area of rectangle (area = base \* height) (08 Marks)  
c. What are static members of a class? Write and explain program to count the number of objects created. (07 Marks)
- 2 a. How do you space helps in preventing pollution of global namespace. (06 Marks)  
b. Write a C++ program that has a class names 'student' with data members name, USN and average and two member function read( ) to read students data and write( ) to display record on screen. Write main( ) function to read and display three students data. (07 Marks)  
c. What is reference variable? Write a C++ program to swap two integer numbers and display values before and after swapping. (07 Marks)
- 3 a. List and explain Java buzzword. (08 Marks)  
b. Explain (i) >>> (ii) for each (iii) Short circuit operator. (06 Marks)  
c. Write a Java program to find biggest and smallest element in an array of 'n' elements. (06 Marks)
- 4 a. Discuss with example how arrays are declared and initialized in Java. Write a Java program to demonstrate the use of array. (08 Marks)  
b. Write a Java program to perform arithmetic operation ( +, -, \*, / ) based on user choice and display the result on screen. (06 Marks)  
c. Explain briefly type casting in Java. (06 Marks)
- 5 a. Explain the concept of inheritance and its classification. (08 Marks)  
b. What is an exception? Explain the usage of throw keyword with an example. (06 Marks)  
c. Discuss use of interface. Give its syntax with example in Java. (06 Marks)
- 6 a. Can constructor be overloaded in Java? Justify your answer. (08 Marks)  
b. With example program, explain two uses of super in Java inheritance. (08 Marks)  
c. Write a note on Garbage Collection. (04 Marks)
- 7 a. Define a thread. List the differences between multiprocess and multithreaded concepts. (06 Marks)  
b. Illustrate with an example, the use of isAlive( ) and join( ) method. (08 Marks)  
c. Discuss delegation event model with example. (06 Marks)



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- 8 a. Write a Java program to implement producer consumer problem using thread. (08 Marks)  
b. What is synchronization? Explain with an example how synchronization is implemented in Java. (06 Marks)  
c. Write a note on :  
(i) adapter class (ii) inner class. (06 Marks)
- 9 a. List and explain two types of applet? Explain the skeleton of an applet. (06 Marks)  
b. Describe the steps to create JTable. Write a program to create a table with the column heading Name, USN, Marks, Grade and insert 5 records into the table and display on screen. (10 Marks)  
c. Write a note on components and containers. (04 Marks)
- 10 a. Demonstrate how to pass parameters for font name and font size in applet. (06 Marks)  
b. List and explain different forms of repaint method. (07 Marks)  
c. Create a swing applet that has two buttons named "Outline class" and "Offline class". When either of the button is pressed it should print "Online class is scheduled" or "Offline class is scheduled". (07 Marks)

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