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| **Sr. no.** | **Program Name** | **R1** | **R2** | **R3** | **R4** | **R5** | **Total Marks** | **Signature** |
| 1. | Implement all major functions of string.h in single C program using switch case to select  specific function  from user choice (like strlen, strcat, strcpy, strcmp, strrev) |  |  |  |  |  |  |  |
| 2. | Write a program (WAP) in C to  reverse a linked list iterative and recursive. |  |  |  |  |  |  |  |
| 3. | WAP in C to implement iterative Towers of Hanoi. |  |  |  |  |  |  |  |
| 4. | WAP in C++ to count the no.s of object of a class with the help of static data member, funtion  and constructor. |  |  |  |  |  |  |  |
| 5. | WAP in C++ & Java to declare a class Time with data members mm for minutes, ss for seconds and hh for hours. Define a parameterize constructor to assign time to its objects. Add two time objects using member function and assign to third objects. Implement all possible cases of time. |  |  |  |  |  |  |  |
| 6. | WAP in C++ to define a class  Complex to represents set of all complex numbers. Overload ‘+’ operator to add two complex numbers using member function of the class and overload ‘\*’ operator to multiply two complex numbers using friend function of the class complex |  |  |  |  |  |  |  |
| 7. | Implement simple multi-threaded server to perform all mathematics operation parallel in Java. |  |  |  |  |  |  |  |
| 8. | Write a program in to prepare a list of 50 questions and their answers |  |  |  |  |  |  |  |
| 9. | Write a program to display 10 questions at random out of exp.8-50 questions (do not display the answer of these questions to the user now) |  |  |  |  |  |  |  |
| 10. | Implement producer-consumer problem using threads |  |  |  |  |  |  |  |
| **Beyond the syllabus Experiments** | | | | | | | | |
| 1. | Write a Program where it may or may not print counter value in sequence and every time we run it, it produces a different result based on CPU availability to a thread. |  |  |  |  |  |  |  |
| 2. | There are 200 questions on a 3 hr examination. Among these questions are 50 mathematics problems. It is suggested that twice as much time be spent on each maths problem as for each other question. WAP which calculates how many minutes should be spent on mathematics problems. |  |  |  |  |  |  |  |
| 3. | Two polynomials are entered by the user in the form of : ax2 + bx + c where the powers of x can be any integer value and a,b& c are constants. Now WAP in C and JAVA which calculates the sum, product and difference of the two polynomials. |  |  |  |  |  |  |  |
| 4. | The hexadecimal digits are the ordinary, base-10 digits '0' through '9' plus the letters 'A' through 'F'. In the hexadecimal system, these digits represent the values 0 through 15, respectively. Write a function in JAVA and C named hexValue that uses a switch statement to find the hexadecimal value of a given character. The character is a parameter to the function, and its hexadecimal value is the return value of the function. You should count lower case letters 'a' through 'f' as having the same value as the corresponding upper case letters. If the parameter is not one of the legal hexadecimal digits, return -1 as the value of the function. |  |  |  |  |  |  |  |
| 5. | A coffee shop blends 2 kinds of coffee, putting in 2 parts of a 33p. a gm. grade to 1 part of a 24p. a gm. If the mixture is changed to 1 part of the 33p. a gm. to 2 parts of the filess expensive grade .WAP which calculates that how much will the shop save in blending 100 gms |  |  |  |  |  |  |  |
| 6. | In June a baseball team that played 60 games had won 30% of its game played. After a phenomenal winning streak this team raised its average to 50% . WAP which calculates how many games must the team have won in a row to attain this average. |  |  |  |  |  |  |  |
| 7. | A company contracts to paint 3 houses. Mr. Brown can paint a house in 6 days while Mr. Black would take 8 days and Mr. Blue 12 days. After 8 days Mr. Brown goes on vacation and Mr. Black begins to work for a period of 6 days. WAP which calculates how days will it take Mr. Blue to complete the contract |  |  |  |  |  |  |  |
| 8. | 2 hours after a freight train leaves Delhi a passenger train leaves the same station traveling in the same direction at an average speed of 16 km/hr. After traveling 4 hrs the passenger train overtakes the freight train. WAP which calculates the average speed of the freight train. |  |  |  |  |  |  |  |