U.G. 2nd Semester Examination - 2021
COMPUTER SCIENCE
[HONOURS]
Course Code : COM.SC-H-CC-P-203
(Programming in C++ Lab.)
[PRACTICAL]

Full Marks : 75   Time : 6 Hours

Marks Distribution :

Experiment : 60 marks

Viva voce : 10 marks.

Lab Notebook : 5

The figures in the right-hand margin indicate marks.

Answer **two** questions to be selected on lottery basis.

30×2=60

1. Write a C++ program which takes the radius of a circle as input from the user, passes it to another function that computes the area and the circumference of the circle and displays the value of area and circumference from the main() function.

2. Write a C++ program to multiply and add two matrices using operator overloading.

3. Write a C++ program to illustrate exception handling using stack operation as an example.

4. Write a C++ program to illustrate dynamic polymorphism using different shapes as an example.

5. Write a C++ program to implement the concept of binary operator overloading to add two complex numbers.

6. Write a C++ program illustrating Class Declarations, Definition, and Accessing Class Members.

7. Write a C++ program that reverses the elements of an array in place. The function must accept only one pointer value and return void.

8. Write a C++ program that copy the content of one given text file to another file, after removing all whitespaces.

9. Write a C++ program that copy the content of one given text file to another file, after removing all whitespaces using command line arguments.

10. Write a C++ program to calculate factorial of a number (i) using recursion, (ii) using iteration. Write down the weak points of your program.

11. Write a C++ program to compute the sum of the following series:

$$S = 1 + 1/2! + 1/3! + 1/4! + 1/5!$$

12. Write a C++ program to concatenate two strings using operator overloading.

13. Write a C++ program to find weather a number is Armstrong number. A number is said to be Armstrong number if the sum of digits raised to the power of number of digits is equal to the number. For example: $371 = 3^3 + 7^3 + 1^3 = 371$ and $1634 = 1^4 + 6^4 + 3^4 + 4^4 = 1634$.

14. Write a C++ program to generate a Fibonacci series up to n terms, where n should be taken as input.

15. Write a C++ program to generate a Fibonacci series up to n terms, where n is a command line argument.

16. Write a C++ program to use pointer for both base and derived classes and call the member function, where the base class has at least one virtual function.

17. Write a C++ program to create multilevel inheritance. (Hint: Classes A1, A2, A3)

18. Write a C++ program to declare a class., declare pointer to class., initialize and display the contents of the class member.

19. Write a C++ program to copy the content of one file into another file using command line arguments. Display appropriate message if overwritten is attempted.

20. Write a C++ program to display names, roll no., and grades of 3 students who have appeared in the examination. Declare the class of name, roll no. and grade. Create an array of class objects. Read and display the contents of the array.

21. Write a C++ program to read the data of n employees and compute net salary of each employee (DA=52% of Basic and Income Tax (IT) =30% of the gross salary).

22. Write a C++ program to write a given number in words.

23. Write a program in C++ to demonstrate different types of constructors. Create a class having two data members in the private section. Use different types of constructors to initialize these data members and display these values with the help of member function.

24. Write a program in C++ to add two complex numbers using operator overloading.

25. Write a program in C++ to add two strings using operator overloading.

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