Register No.: ....   Name: ....

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

THIRD SEMESTER INTEGRATED MCA DEGREE EXAMINATION (R), DECEMBER 2023
(2020 SCHEME)

Course Code: 20IMCAT205

Course Name: **Introduction to Object Oriented Programming**

Max. Marks: **60**   **Duration: 3 Hours**

PART A
(Answer all questions. Each question carries 3 marks)

1. Write short note on access specifiers.
2. Define runtime polymorphism.
3. Explain the inline function with the help of an example.
4. List any four principles of function overloading.
5. Illustrate unary operator overloading with the help of an example.
6. What is an abstract class? Give an example.
7. Highlight the use of **this** pointer with the help of an example.
8. Explain new and delete operators.
9. Explain get() and put() functions with the help of suitable examples.
10. Write short note on exception handling.

PART B
(Answer one full question from each module, each question carries 6 marks)

MODULE I

11. Explain the basic concepts of object oriented programming.   (6)

OR

12. Write a C++ program to read emp_name, empid, age, department, basic salary, DA, TA, OTHERS, PF, IT and find the net salary of 5 employees using array of objects.
(Net salary=basic salary +DA +TA + others – (PF+IT))   (6)

MODULE II

13. Analyze static data member and static member function with the help of an example.   (6)

OR

14. Explain default and parameterized constructors with the help of suitable example.   (6)

MODULE III

15. Create a class student which stores the protected data rollno, name, course and age. Use get_data() function to initialize the values. Derive a class test from student, which stores the marks obtained in 5 subjects, getmarks() function to initialize the marks. Derive another class result from test with data members totalmark and percentage to store the total mark and percentage respectively. Display all the details of student,subjectwise mark ,total mark and percentage. Write a main program to test multilevel inheritance. (6)

OR

16. Develop a C++ program to find the sum of two complex numbers using binary operator overloading and friend function. (6)

MODULE IV

17. Explain pointer to derived class and base class with the help of an example. (6)

OR

18. Define virtual functions. Mention the rules for defining a virtual function. Give example. (6)

MODULE V

19. Explain C++ streams with the help of examples. (6)

OR

20. Write short note on class template and function template. (6)

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