30. a. Write a program to illustrate how reading of a content from two files can happen simultaneously using streams.

(OR)

b. Discuss in detail about file pointers with an example.

31. a. Elaborate how exception can be handled in C++ with a suitable example.

(OR)

b. Explain in detail about class template and with a example program justify how it can be used for generic programming,

32. a. Discuss about the various components of the standard template library.

(OR)

b. Elaborate in detail about algorithm in STL and write a program that can accepts a input of "10" student details and perform the following
   (i) Find the student who has secured marks >90
   (ii) Delete the fifth student from the list
   (iii) Count the number of student in the list

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Reg. No.															

B.Tech. DEGREE EXAMINATION, DECEMBER 2018

1st to 6th Semester

15SE201J – OBJECT ORIENTED PROGRAMMING USING C++

(For the candidates admitted during the academic year 2015 – 2016 to 2017-2018)

Note:

(i) **Part - A** should be answered in OMR sheet within first 45 minutes and OMR sheet should be handed over to hall invigilator at the end of 45th minute.

(ii) **Part - B** and **Part - C** should be answered in answer booklet.

Time: Three Hours Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

1. Which among the following is the main use of object?
   (A) To create instance of a function (B) To create instance of a program
   (C) To create instance of a class (D) To create instance of structure

2. Which feature of OOP indicates code reusability?
   (A) Encapsulation (B) Inheritance
   (C) Abstraction (D) Polymorphism

3. Which among the following is called first, automatically whenever an object is created?
   (A) Class (B) Constructor
   (C) New (D) Trigger

4. How will a class protect the code inside it?
   (A) Using access specifier (B) Abstraction
   (C) Use of inheritance (D) All of above

5. What will be the output of this program?
   #include <iostream> using namespace std;
   int main (). {
   char C = 74; cout << C; return 0;}
   (A) A (B) N
   (C) J (D) a

6. Copy construction is a used to _____
   (A) Create an object by copying values from any other object of the same class (B) Create an object by initializing it with another previously created object of same class
   (C) Copy the function (D) Copy the values of data members and member function

7. When will a destructor be called?
   (A) After the end of object life (B) Any time in between object's life span
   (C) At end of whole program (D) Just before the end of object life

8. Choose the correct sequence of destructor being called for the following code:
Class A{}; class B{};
Class C: public A, public B {};
(A) ~A(), ~B(), ~C() (B) ~B(), ~C(), ~A()
(C) ~A(), ~C(), ~B() (D) ~C(), ~B(), ~A()

9. Which among the following can restrict class members to get inherited?
(A) Private (B) Private and protected
(C) Private and public (D) All the three together

10. The function of ofstream in C++ includes the following namely
(A) Writes to a file (B) Reads from a file
(C) Both A and B (D) Deletes from a file

11. To specify the required field size for displaying an output value _____ is used.
(A) fill () (B) setf()
(C) width() (D) precision()

12. using namespace std;
class test { static int i; int j; };
int test :: I;
int main ()
{ cout << size of (Test);return 0;}
(A) 3 (B) 4
(C) 2 (D) 5

13. Errors such as "out of range index" and "overflow" belong to _____ type of exceptions.
(A) Synchronous (B) Asynchronous
(C) Functional (D) None of the above

14. The syntax of a catch statement to catch all the exceptions is given by
(A) Catch (,) (B) Catch (;)
(C) Catch (::) (D) Catch (...)

15. A _____ block may throw an exception directly or invoke a function that throws an exception.
(A) try (B) throw
(C) catch (D) rethrow

16. _____enablers to define generic classes and functions and this provides support for generic programming.
(A) Modules (B) Exceptions
(C) Template (D) Files

17. _____allows insertions and deletion at back.
(A) Vector (B) List
(C) Dequeue (D) Queue

18. What do vectors represent?
(A) Static array (B) Dynamic array
(C) Stack (D) Queues

19. _____iterator has forward direction of movement and has read only capability.
(A) Output (B) Forward
(C) Input (D) Bidirectional

20. _____ are standalone functions that are to carry out operations on the contents of containers, such as sorting, searching, merging.
(A) Algorithm (B) Iterations
(C) Template (D) Function objects

PART – B (5 × 4 = 20 Marks)
Answer **ANY FIVE** Questions

21. Categorise the various data types that are used in C++, with a neat hierarchy representation diagram.

22. Justify the need for scope-resolution operator with a simple example.

23. Using inline function, execute the output for multiply and dividing of two double values. (eg) mul (12.34, 9.82); div (12.34, 9.82).

24. Compare and contrast:
Static data member and static member function with a example program.

25. Consider the scenario, where the user enters a string or character and with the get () and put() function, the string entered is displayed as output. Execute the program.

26. Write a program to swap any two integer values and float values using function template.

27. Discuss the characteristics of function object with an example program.

PART – C (5 × 12 = 60 Marks)
Answer **ALL** Questions

28. a. Elaborate in detail about the various characteristics of object oriented programming with suitable diagram.

(OR)

b.i. Discuss about the various storage classes. (4 Marks)

ii. Define array. With an example, write a program for (2×2) matrix multiplication. (8 Marks)

29. a. Discuss in detail about constructor and its types.

(OR)

b. Consider a scenario where class "student" serves as the base class for derived class "test", which in turn serves as the base class for the derived class "result". Identify the types of inheritance used, and write a program to process the student details where class "student" gets and display the roll number, class "test" accepts 2 marks of the students and class "result" displays the sum of two marks as total along with the roll number.