B.Tech. DEGREE EXAMINATION, MAY 2022
Third Semester

18CSC202J – OBJECT ORIENTED DESIGN AND PROGRAMMING
(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

Note:
(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
(ii) **Part - B** should be answered in answer booklet.

Time: 2½ Hours   Max. Marks: 75

PART – A (25 × 1 = 25 Marks)
Answer **ALL** Questions

	Marks	BL	CO	PO
1. Predict which one of the following is not an OOPS Concept?	1	2	2	1

(A) Exception   (B) Encapsulation
(C) Abstraction   (D) Polymorphism

	Marks	BL	CO	PO
2. A function contained within a class in C++ is _____.	1	1	1	1

(A) A Method   (B) A Member Function
(C) An Inline Function   (D) A Class Function

	Marks	BL	CO	PO
3. Which of the following is the purpose of 'Unified Modeling Language'?	1	2	1	1

(A) A program that builds physical models   (B) The Combination of programming Languages to build Physical Models
(C) A Frame Work used to Develop Software Systems   (D) A way to look at the Organization of a program

	Marks	BL	CO	PO
4. Select the Role of a Constructor from the following	1	3	1	1

(A) It is used to construct a new class   (B) It is used to construct a new object
(C) It is used to construct a new function   (D) It is used to initialize objects

	Marks	BL	CO	PO
5. In C++ the 'COUT' is available in which of the following class?	1	2	1	1

(A) iostream   (B) istream
(C) ostream   (D) ifstream

	Marks	BL	CO	PO
6. Which of the following operator can be overloaded in C++?	1	2	2	1

(A) *   (B) ( )
(C) →   (D) =

	Marks	BL	CO	PO
7. What is the default access specifier for the class member?	1	1	2	2

(A) Protected   (B) Private
(C) Public   (D) Friend

	Marks	BL	CO	PO
8. _____ is a restricted class that cannot be used to create objects in C++	1	3	2	3

(A) Parent Class   (B) Anonymous Class
(C) Nested Class   (D) Abstract Class

	Marks	BL	CO	PO
27. a. Explain different types of constructors in C++ with suitable examples	10	2	2	1

(OR)

	Marks	BL	CO	PO
b. Explain about overloading an operator with an example.	10	3	2	3
28. a. Develop C++ programs to demonstrate different types of inheritances.	10	3	3	3

(OR)

	Marks	BL	CO	PO
b. Create three classes with names shape, rectangle and square. Make use of the functions getdata ( ), Printdata ( ) and area ( ). To find the area of rectangle and square. Which type of inheritance is suitable? Why? Explain.	10	4	3	3
29. a. Draw the UML package diagram for ATM machine explain its Functions.	10	3	4	3

(OR)

	Marks	BL	CO	PO
b.i. What is an Exception? How it is handled in C++ Programming?	2+3	1	4	1
ii. Discuss in detail about 'Class Template' with suitable example.	5	2	4	2
30. a.i. Write short notes on STL containers.	4	1	5	1
ii. Explain the different types of sequential containers.	6	3	5	1

(OR)

	Marks	BL	CO	PO
b. Describe the functions of associative containers in C++ with suitable examples.	10	2	5	2

* * * * *

9. Which UML diagram is used to show dynamic aspects related to a system?   1   4   2   3
   (A) Sequence Diagram   (B) Use case Diagram
   (C) Interaction Diagram   (D) Deployment Diagram

10. In C++, a constructor with no arguments is called _____   1   1   2   3
    (A) Copy constructor   (B) Parameterized Constructor
    (C) Over Loaded constructor   (D) Default Constructor

11. Which of the following statements are true?   1   4   3   3
    I. Static Polymorphism achieved through Function overloading
    II. A Derived Class members can access the protected members of the base class
    III. A derived class inherits constructors and destructors of the base class

    (A) I and III only   (B) I and II only
    (C) I, II and III   (D) II and III only

12. In C++, Inline functions are expanded during _____   1   1   3   4
    (A) Debug Time   (B) Test Time
    (C) Compile Time   (D) Run Time

13. Predict the type of inheritance 'Class D is derived from base classes A, B and C   1   2   3   4
    (A) Multi – Level Inheritance   (B) Multiple Inheritance
    (C) Hybrid Inheritance   (D) Hierarchical Inheritance

14. Which UML diagram provides the static view of the system?   1   3   3   2
    (A) State Chart   (B) Collaboration
    (C) Use Case   (D) Activity

15. Which of the following UML diagram is Time oriented   1   3   3   2
    (A) Collaboration   (B) Sequence
    (C) Activity   (D) Use Case

16. Infer the meaning of the following C++ statement int (*fp) (char *)   1   3   4   2
    (A) Pointer to a Pointer   (B) Pointer to an Array or Characters
    (C) Function taking a char * argument and returning a pointer to an integer   (D) Pointer to function taking a char * argument and returns a pointer to int

17. In C++, Generic programming can be achieved through _____   1   3   4   3
    (A) Templates   (B) Inline Functions
    (C) Friend Functions   (D) Abstraction

18. In C++, exception handling is achieve by using _____ , _____ and _____   1   3   4   3
    (A) Try, Except, Throw   (B) Try, Catch, Throw
    (C) Try, Catch, Thrown   (D) Try, Except, Throws

19. A collection of model elements in UML are referred to as _____   1   2   4   4
    (A) Box   (B) Dependency
    (C) UML Notes   (D) Package Members

20. Identify the elements of UML package diagram form the following: 1   4   4   4
    (A) Package Symbols   (B) Group of use cases, classes and components
    (C) Interfaces   (D) Package symbols, grouping of use cases, classes and components

21. What is the 'Standard Template Library' in C++?   1   1   5   2
    (A) Set of C++ classes   (B) Set of Data Structures
    (C) Set of Template classes to Provide common programming data structures and functions   (D) Set of Template functions used for easy data structure implementations

22. What are the container in the C++ standard template Library?   1   1   5   1
    (A) Containers store objects and data   (B) Containers store all the Algorithms
    (C) Containers store all the Programs   (D) Containers store over loaded function

23. In C++ STL, iterators are used to _____   1   2   5   2
    (A) Iterate over C- like arrays   (B) Iterate over Pointers
    (C) Point memory addresses of STL containers   (D) Iterate over Functions

24. In C++ STL, the unordered associative containers are used to _____   1   3   5   2
    (A) Implement sorted data structure that can be searched in O(log n)   (B) Implement unordered data structures that can be quickly searched
    (C) Implement data structures that can be accessed in a sequential manner   (D) Implement data structure that can be searched in random order

25. The UML diagram used to show interaction between messages are called as _____   1   2   5   3
    (A) Activity Diagram   (B) State Chart Diagram
    (C) Object Life Line   (D) Collaboration Diagram

PART – B (5 × 10 – 50 Marks)
Answer ALL Questions

                                            Marks   BL   CO   PO

26. a.i. What is object oriented programming?   2   1   1   1

    ii. Distinguish between procedure oriented and object oriented programming.   8   2   1   1

(OR)

    b.i. Describe the problem statement for Library Management System.   4   1   1   1

    ii. Design the UML class diagram for the same and explain.   6   4   1   3