Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U3203

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Third Semester

Computer Science Engineering

21UCS303– OBJECT ORIENTED PROGRAMMING USING C++

(Common to IT,CSBS & CSD Engineering branches)

(Regulations 2021)

Duration: Three hours | Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.	Why the define directive is used?	CO1- U
2.	Write a C++ program to print the first n natural numbers.	CO1-App
3.	What is the order of construction and destruction of objects?	CO1- U
4.	Write a C++program to count the number of objects of a certain class.	CO2-App
5.	Write down the syntax for Basic to User defined functions.	CO1- U
6.	List the operators that cannot be overloaded.	CO1- U
7.	What is Hybrid Inheritance?	CO1- U
8.	What is public mode of inheritance? Give an example.	CO1- U
9.	Write a C++ program to handle a single try, catch exceptions for your own problem situation.	CO2-App
10.	List the various types of performing formatted stream I/O operations.	CO1- U

PART – B (5 x 16= 80 Marks)

11.	(a)	What is the need of a Function in C++? Explain the syntax for function declaration, Function definition and a Function call. Write a C++ Program to find whether a given number is a palindrome or not using functions.	CO1- U	(16)
		Or		
	(b)	What is a structure? What is the basic difference between an array and a structure? Write a C++ program to print the personal details, marks in 5 subjects, total and the overall percentage of marks of a student using structures.	CO1- U	(16)

12.	(a)	Create a class complex with real and imaginary as data members. Also include member functions to get the values for a complex number and to print the complex number in a+ib format. Also include friend functions to add two complex numbers and multiply two complex numbers.	CO2- App	(16)
		Or		
	(b)	Write a C++ program to read information about plant like plant-name, plant-code, plant-type and price. Construct the database with suitable member functions for initialization and destroying the data via constructor and destructor.	CO2- App	(16)
13.	(a)	Write a C++ program to swap two integers, floats, characters and two strings using function overloading concept.	CO2- App	(16)
		Or		
	(b)	Write a C++ program to perform complex number addition, subtraction, multiplication using operator overloading with friend functions.	CO2- App	(16)
14.	(a)	Create three classes Student, Test and Result classes. The student class contains student relevant information. Test class contains marks for five subjects. The result class contains Total and average of the marks obtained in five subjects. Inherit the properties of Student and Test class details in Result class through multiple inheritance.	CO2- App	(16)
		Or		
	(b)	Create a base class Shape with relevant data members and member functions to get data and print the area. Create two more classes Rectangle and Triangle which inherit Shape class. Make the print data function as virtual function in base class. Write a C++ main ( ) function to check this.	CO2- App	(16)
15.	(a)	Create a user defined manipulator for displaying the details of employees in a neat table format. (Hint: Employee details can be maintained as array of structures).	CO2- App	(16)
		Or		
	(b)	Write a C++ program to perform Sorting of File contents.	CO2- App	(16)