Q. Code:840209

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

B.E./ B. TECH DEGREE EXAMINATIONS, MAY 2024

Second Semester

CS22203 – OBJECT ORIENTED PROGRAMMING

(Computer Science and Engineering)

(Regulation 2022)

TIME:3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Apply the concepts of data abstraction, encapsulation and inheritance for Problem solutions. Critically analyze the problem and apply Object Oriented Concepts for practical problem solving	**2**
CO 2	Develop applications with function and operator overloading.	**3**
CO 3	Develop programs with reusability	**3**
CO 4	Design and implement generic classes with C++ templates and handle exceptions.	**3**
CO 5	Handle large data set using file I/O and use STL.	**2**

PART- A(20x2=40Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Compare and Contrast object based and object oriented Programming.	**1**	**2**
2.	What is encapsulation? How does it help a programmer to design the system better?	**1**	**2**
3.	Illicit the significance of Pointer to constant and give one example.	**1**	**2**
4.	Mention the importance of friend function and where it is a better choice than a member function.	**1**	**2**
5.	Give an example where default constructor provided by the user becomes necessary.	**2**	**3**
6.	What is meant by implicit and explicit constructors.	**2**	**2**
7.	List the operators which cannot be overloaded as a friend.	**2**	**2**
8.	Enumerate the differences between an operator overloaded as a member and as a friend.	**2**	**3**
9.	What are the advantages of using inheritance?	**3**	**2**
10.	Differentiate static binding and dynamic binding.	**3**	**3**
11.	What are abstract classes? Give some examples.	**3**	**2**
12.	Why do we need RTTI? Suggest some cases where we need to use RTTI.	**3**	**3**
13.	Compare and contrast error and exception.	**4**	**2**
14.	When do we need multiple catch blocks for a single try block? Give an example.	**4**	**3**
15.	What is the need for template functions in C++?	**4**	**2**
16.	Give an example where using the default arguments are useful in the class template.	**4**	**3**
17.	What is the difference between STL and other libraries?	**5**	**2**

18.	List the different types of containers.	**5**		**2**
19.	Mention any four file modes and their purpose.	**5**		**2**
20.	Give the usage of ios class.	**5**		**2**

PART- B (5x 10=50Marks)

		Marks	CO	RBT LEVEL
21. (a)	Discuss the characteristics of object oriented Programming in detail.	**(10)**	**1**	**3**
	(OR)			
(b)	Explain Function Overloading with an example.	**(10)**	**1**	**3**
22. (a)	Develop a program in which '* ' is overloaded for multiplying a scalar value to a matrix. Overload the same operator for multiplying two matrices.	**(10)**	**2**	**3**
	(OR)			
(b)	Define a supplier class. Assume that the items supplied by any supplier are different and varying in number. Use dynamic memory allocation in the constructor function to achieve the solution.	**(10)**	**2**	**3**
23. (a)	Define a class Student. Inherit that into engineering, arts, commerce and science students. Inherit engineering student into Computer, Electronics & Communication and Information Technology. Provide Constructors for all the classes.	**(10)**	**3**	**3**
	(OR)			
(b)	Explain the concept of virtual function with an example program.	**(10)**	**3**	**3**
24.(a)	Define a stack class. The class should throw an exception when the stack underflow and overflow occurs.	**(10)**	**4**	**3**
	(OR)			
(b)	Write a C++ program using function template to find the product of two integers or floating point type of data.	**(10)**	**4**	**3**
25. (a)	Write a program to read text file and count number of characters in it.	**(10)**	**5**	**3**
	(OR)			
(b)	Explain how sequence iterators work with a example program.	**(10)**	**5**	**3**

PART- C (1x 10=10Marks)

(Q.No.26 is compulsory)

		Marks	CO	RBT LEVEL
26.	Define an Examiner class. Provide all necessary data and function members to provide the following: The examiner must access answer sheets of at least one subject; he may examine answer sheets of multiple sheets; The examiner represents a college and a university; Most of the examiners are local and represent local university; and Have more than one constructor including one default and one with default argument. Provide a meaningful copy constructor	**(10)**	**2**	**5**

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