

Reg. No.

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**B.E./ B.TECH. DEGREE EXAMINATIONS, MAY 2023**

Second Semester

**IT18201 – OOPS USING C++ AND PYTHON***(Information Technology)***(Regulation 2018/2018A)****TIME:3 HOURS****MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Examine the features and basics of OOPS.	4
CO 2	Apply the various features of object oriented programming to construct applications in C++.	4
CO 3	Develop the software using advanced features of Object oriented programming to solve real time problems.	5
CO 4	Develop the programs to implement the basics of python.	5
CO 5	Choose the data structures and design patterns to construct applications using python.	5

**PART- A(10x2=20Marks)***(Answer all Questions)*

	CO	RBT LEVEL
1. How Encapsulation is achieved in C++?	1	2
2. Distinguish between reference and pointer.	1	4
3. How do you dynamically allocate / deallocate a memory for an array in C++?	2	2
4. Is Abstract base class used to create objects? Justify your answer.	2	4
5. Design a function template to find the maximum of two values, and call the function of int, float and char values.	3	3
6. Write a C++ program to raise exception when an attempt is made to perform divide by zero operation.	3	3
7. Is indentation require in python? Justify your answer.	4	4
8. Outline the logic to swap the contents of two identifiers without using third variable.	4	3
9. How to create a list in python? Illustrate the use of negative indexing of list with example.	5	3
10. Define Module. How it is declared in python?	5	2

**PART- B (5x 14=70Marks)**

	Marks	CO	RBT LEVEL
11. (a) Explain the different types of constructor. Write a C++ program to model Matrix class using different types of constructor.	(14)	1	2

**(OR)**

(b)	Explain in detail about friend function and friend class with suitable example.	(14)	1	2
12. (a)	Explain the syntax of operator overloading. How many arguments are needed in the definition of an overloaded binary operator with and without friend function. Write an interactive operator overloaded C++ program for manipulating matrices? Overload the operators + and ++.	(14)	2	3
(OR)				
(b)	Create class first with data members book no, book name and member function getdata() and putdata(). Create a class second with data members author name, publisher and members getdata() and showdata(). Derive a class third from first and second with data member no of pages and year of publication. Display all these information using array of objects of third class.	(14)	2	3
13. (a)	Write a program to define the function template for calculating the square of given numbers with different data types.	(14)	3	3
(OR)				
(b)	Construct a list using STL and perform operations pushback, pushfront, popfront, popback, insert and erase. Explain in detail about components of STL.	(14)	3	3
14. (a)	Write a python program to implement the student details with the appropriate constructors, methods using the concept of inheritance.	(14)	4	3
(OR)				
(b)	Explain in detail about the modules and packages in python. Write a python program to compute the Fibonacci series for a given number using the concept of Modules.	(14)	4	3
15. (a)	Illustrate using a python program to explain the various ways of creating sets and various operations on sets.	(14)	5	3
(OR)				
(b)	Create a List with the following elements. [1, Apple,2, Banana,3, Cat,4, Dog] Convert the list into Dictionary Update something into dictionary Add something into dictionary Remove all the entries from the dictionary Delete the entire dictionary	(14)	5	3

**PART- C (1x 10=10Marks)**

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Develop an application for Student management system.	(10)	3	5

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