



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Third Semester, B.E. - Computer Science and Engineering

Semester End Examination; March - 2021

Object Oriented Programming with C++

Time: 3 hrs

Max. Marks: 100

Note: I) PART - A is compulsory. Two marks for each question.

II) PART - B: Answer any Two sub questions (from a, b, c) for Maximum of **18 marks** from each unit.

Q. No.	Questions	Marks
I : PART - A		10
I a.	List the situation where inline expansion may not work?	2
b.	List any four properties of a constructor.	2
c.	When do we use protected visibility specifier to a class member?	2
d.	How polymorphism is achieved at compile time and runtime?	2
e.	How to implement concepts of generic programming and C++? Give example.	2
II : PART - B		90
UNIT - I		18
1 a.	Explain OOP's concepts: Inheritance, Polymorphism and Data abstraction with suitable example.	9
b.	Write C++ program that defines a class named triangle with base, height being its data members and area(), write() being its member functions. Calculate the area and display all values.	9
c.	What is member function? What are the ways in which member functions are defined? Give example to each.	9
UNIT - II		18
2 a.	With an example code, explain the following:	9
	i) Parameterized Constructor ii) Default Constructor iii) Copy Constructor	
b.	Explain the concepts of operator overloading. Write a C++ program to overload * operator to find the product of the data members of two objects. Consider minimum two data members in each object.	9
c.	Write a program to concatenate two strings using dynamic constructor.	9
UNIT - III		18
3 a.	Explain the concept of overloading template function. Illustrate the same with an example.	9
b.	Define Exception. How it is handled in C++? Explain with an example.	9
c.	Explain briefly the following categories of containers. Vector, List and Map.	9

UNIT - IV**18**

- 4 a. Explain any three forms of inheritance with syntax. 9
- b. Explain with suitable code, how base class member function can be invoked in a derived class, if the derived class also has a member function with same name. 9
- c. Explain with an example how constructors are implemented when the classes are inherited? 9

UNIT - V**18**

- 5 a. Explain hierarchy of stream classes for console input operation with suitable block diagram. 9
- b. Discuss about early binding and late binding with program snippet. 9
- c. Define pure virtual function. With suitable example program, distinguish between virtual function and pure virtual function. 9

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