Code No: R161215 **R16** SET - 1

I B. Tech II Semester Regular/Supplementary Examinations, April/May - 2018
OBJECT ORIENTED PROGRAMMING THROUGH C++
(Com. to CSE, IT)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1.	a)	Define dynamic binding.	(2M)
	b)	List out the types of constructors.	(2M)
	c)	Compare private and protected member access modes.	(2M)
	d)	Name the operators that cannot be overloaded.	(2M)
	e)	What is the default access mode for class members?	(2M)
	f)	What is generic programming?	(2M)
	g)	What is the difference between function overloading and function template?	(2M)

PART -B

2.	a)	Give the structure of a C++ Program.	(7M)
	b)	Demonstrate encapsulation and polymorphism.	(7M)
3.	a)	How members function is defined inside a class and outside the class? Explain with an example each.	(7M)
	b)	Define parameterized constructors. How to write them? Give an example.	(7M)
4.	a)	Define operator overloading. Write the rules to overload operator.	(7M)
	b)	Define the term virtual base class and its implementation in C++. How it is used in function overriding?	(7M)
5.	a)	How a pointer is declared ad initialized? Give an overview of pointer arithmetic.	(7M)
	b)	Describe the mechanism of creating virtual functions in C++ with an example.	(7M)
6.	a)	Write a program to create a template function for bubble sort and demonstrate the sorting of integers and characters.	(7M)
	b)	What are macros? How are they different from templates? Give an example.	(7M)
7.		What is a container? State and explain types of containers along with the iterators.	(14M)
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Code No: R161215 **R16** SET - 2

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2. Answer **ALL** the question in **Part-A**
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PART –A

1.	a)	Compare OOP language and structured programming language.	(2M)
	b)	List the characteristics of a constructor.	(2M)
	c)	What is an inline function? What is the use of it?	(2M)
	d)	What is the use of scope resolution operator?	(2M)
	e)	Differentiate run –time polymorphism with compile time polymorphism.	(2M)
	f)	What is the use of this pointer?	(2M)
	g)	Define ADT.	(2M)

PART -B

2.	a)	Describe the demerits of conventional programming with suitable examples.	(7M)
	b)	Give the principles of object oriented programming.	(7M)
3.	a)	How to create a class? How to create an object? Explain with an example.	(7M)
	b)	In which order the constructors and destructors are executed? Explain with an example.	(7M)
4.		Write a C++ program to illustrate multiple and multilevel inheritance.	(14M)
5.	a)	Write a C++ program to illustrate pure virtual functions.	(7M)
	b)	Discuss how dynamic allocation is done in C++ programming.	(7M)
6.	a)	Explain the use of try, catch and throw for exception handling in C++.	(7M)
	b)	What is a class template? How is it different from a general class? Explain with an example.	(7M)
7.	a)	Briefly explain the use of Vectors and lists.	(7M)
	b)	What is containership? How it differ from inheritance?	(7M)
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Code No: R161215 **R16** SET - 3

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Time: 3 hours Max. Marks: 70

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2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1.	a)	Give the features of object oriented programming.	(2M)
	b)	Differentiate between class and structure.	(2M)
	c)	List the characteristics of a friend function.	(2M)
	d)	List the types of inheritances.	(2M)
	e)	Differentiate between early binding and late binding.	(2M)
	f)	Give the examples of user defined data types.	(2M)
	g)	How STL is different from C++ standard library?	(2M)

PART -B

2.	a)	Compare the features of C programming language to that of C++programming language.	(7M)
	b)	How data and functions are organized in Object Oriented Program? Explain with an example.	(7M)
3.	a)	Write a C++ program to define three overloaded functions to swap two integers, swap two floats and swap two doubles.	(7M)
	b)	What are the access privileges in C++? What is the default access level? Explain them.	(7M)
4.	a)	Write a C++ program to implement single inheritance with public access specific.	(7M)
	b)	Discuss the usage of the keyword ‘operator’ in operator overloading. Explain with an example.	(7M)
5.	a)	Write a program to implement the concept of virtual base class.	(7M)
	b)	What are pure virtual functions? How are they different from normal functions?	(7M)
6.	a)	Write a C++ program to implement template to find minimum of two data items of type int, float, char and double.	(7M)
	b)	What is a function template? How is it different from a general method? Explain with an example.	(7M)
7.	a)	Briefly explain the use of Maps and Iterators in STL.	(7M)
	b)	How STL algorithms are different from conventional algorithms?	(7M)
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Code No: R161215 **R16** SET - 4

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2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1.	a)	What is data encapsulation?	(2M)
	b)	Give the importance of destructors.	(2M)
	c)	What are nested classes?	(2M)
	d)	Define pure virtual functions	(2M)
	e)	What is the use of namespace?	(2M)
	f)	Give the advantages and usage of macros.	(2M)
	g)	Distinguish between maps and multimaps	(2M)

PART -B

2.	a)	Compare object oriented programming with procedure oriented programming.	(7M)
	b)	How does object oriented approach differ from object based approach? Give the applications of OOP.	(7M)
3.	a)	How a class accomplishes data hiding? Explain with an example.	(7M)
	b)	Illustrate with an example the mechanism of defining a member function and overloading it.	(7M)
4.		With an example, explain the syntax for passing arguments to base class constructors in multiple inheritance.	(14M)
5.	a)	Write a C++ program to illustrate runtime polymorphism using virtual functions.	(7M)
	b)	How to create a virtual destructor? What is the necessity of making it virtual?	(7M)
6.	a)	Write a program using try block to detect and throw an exception if the condition" divide-by-zero" occurs.	(7M)
	b)	How can template be used for generic programming?	(7M)
7.		What is a container? Give the comparison of various containers used in STL programming.	(14M)
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