Group Allocation For Practical Journal			
	Set A	Set B	Set C
	201306100110001	201306100110002	201306100110006
	201306100110008	201306100110009	201306100110011
	201306100110012	201306100110013	201306100110016
	201306100110017	201306100110018	201306100110019
	201306100110021	201306100110022	201306100110024
	201306100110028	201306100110033	201306100110036
	201306100110037	201306100110038	201306100110039
	201306100110043	201306100110044	201306100110045
	201306100110046	201306100110052	201306100110053
	201306100110054	201306100110057	201306100110058
Div- A	201306100110059	201306100110061	201306100110064
21. 12	201306100110068	201306100110069	201306100110072
	201306100110073	201306100110078	201306100110081
	201306100110083	201306100110084	201306100110085
	201306100110087	201306100110089	201306100110092
	201306100110093	201306100110099	201306100110100
	201306100110103	201306100110107	201306100110108
	201306100110110	201306100110114	201306100110115
	201306100110116	201306100110128	201306100110129
	201306100110133	201306100110134	201306100110136
	201306100110138	201306100110140	201306100110141
	201306100110143	201306100110145	201306100110147
	Set D	Set E	Set F
	201306100110004	201306100110003	201306100110005
	201306100110010	201306100110007	201306100110014
	201306100110020	201306100110015	201306100110025
	201306100110027	201306100110026	201306100110029
	201306100110031	201306100110030	201306100110032
Div- B	201306100110035	201306100110034	201306100110040
	201306100110042	201306100110041	201306100110047
	201306100110050	201306100110049	201306100110051
	201306100110062	201306100110060	201306100110063
	201306100110066	201306100110065	201306100110067
	201306100110071	201306100110070	201306100110076
	201306100110090	201306100110086	201306100110091

201306100110096	201306100110094	201306100110097
201306100110102	201306100110101	201306100110104
201306100110106	201306100110105	201306100110109
201306100110113	201306100110112	201306100110117
201306100110119	201306100110118	201306100110120
201306100110122	201306100110121	201306100110123
201306100110126	201306100110125	201306100110127
201306100110131	201306100110130	201306100110132
201306100110137	201306100110135	201306100110139
201306100110144	201306100110142	201306100110146
	201306100110148	

Practical No. 1	Enrollment No <u>.</u>	Group : A
Practical Problem	Write a program to display the follo	
	statement. (No need to take any input from user.)	
	Maths = 90	
	Physics = 77	
	Chemistry = 69	
Objective(s)	Want to make students familiar with	h C++ environment and with cin
	and cout statements.	
Pre-requisite	Usage of cout and cin objects.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, s	
	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic terminology of object oriented	
6.1	programming.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between cout and printf	
questions	statements.	
	2. How one can take input from	
	3. What changes should be made in the logic so that the same	
	program generates the same output in a single line? 4. Which error shall be raised if we use printf statements	
	instead of cout?	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	1744
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 2	Enrollment No.	Group : A
Practical Problem	Write a program to take input of P	
	and Time in years from the user. Calculate Simple Interest,	
	Compound Interest and display it o	n the screen.
Objective(s)	Want to make students familiar wit	ch C++ environment and with cin
	and cout statements.	
Pre-requisite	Usage of cout and cin objects.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	skill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	P06: Ability to use the techniques,	
606). 1 1: 1	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term programming.	imology of object oriented
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	1 1 111	olumo 1 Magtaring CLL by
_	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
Do at Labourtour	Balaguruswami.	
Post Laboratory	1. Give two points of differences between cin and scanf statements.	
questions	2. How one can take input from user in C++?	
	3. What changes should be made in the logic so that the same	
		the user using a single line of
	code?	
	4. Which error shall be raised if we use scanf statements instead	
	of cin?	
	Assessment	1
	Solution achieves the desired	Viva
Out of Marks	objective(s) 10	5
Secured by the	10	
student		
Signature		
Date		

Practical No. 3	Enrollment No. (Group : A
Practical Problem	Write a program to read two number	•
	and display the larger number on the screen.	
Objective(s)	Clear the concept of conditional stat	tements and loops.
Pre-requisite	Usage of cout, cin, different looping of	constructs and conditional
-	statements.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as
	necessary for software developmen	
CO(s) to be achieved	 To understand the basic terms programming. 	inology of object oriented
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel - Vo	lume 1, Mastering C++ by
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Apart from If condition statements, which statements can we	
questions	use to solve this problem?	
	2. How one can compare two int	
	What changes should be made program checks the larger num	0
	integer values?	inder from the given three
	4. Which error shall be raised if we write condition as follow?	
	if(int x=10 && int y=20)	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	_
Out of Marks	10	5
Secured by the student		
Signature		
Date		

Practical No. 4	Enrollment No. (Group : A	
Practical Problem	Write a program to print the following	•	
Tructicui Trobiciii	write a program to print the follows	ing output using for 100p.	
	1		
	22		
	333		
	4444		
	55555		
Objective(s)	Clear the concept of conditional stat	ements and loops.	
Pre-requisite	Usage of cout, cin, different looping of	<u>^</u>	
	statements.	301.001.000 0.110.001.0101.01	
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
1 Lo(3) to be demeved	solve industry problems.	kin or tools and teemfologies to	
PO(s) to be achieved	P06: Ability to use the techniques, s	kills and modern tools as	
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic term		
	programming.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Vo	lume 1. Mastering C++ by	
the problem	Venugopal, Object Oriented Program	-	
the problem	Balaguruswami.		
Doct Laboratory	9	hatrusan far and do subila()	
Post Laboratory	1. Give two points of differences	between for and dowinle()	
questions	loop constructs.		
	2. How one can develop the same program without using for construct?		
	3. What changes should be made in the logic so that the same		
	program prints the same pattern but in descending order as		
	follow?		
	5		
	44		
	333		
	2222		
	11111		
	4. Which error shall be raised if we don't provide any condition		
	in for loop construct?		
	Assessment		
	Solution achieves the desired	Viva	
0.05=	objective(s)	_	
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 5	Enrollment No. (Group : A
Practical Problem	Write a program to define a class ca	
	volume. The area and volume of cone are evaluated using the	
	formula shown below:	
	a. Slant height = $sqrt(r^2 + h^2)$	
	b. Volume = $1/3$ pi*r ² *h	tala also laborated as Comment
Objective(s)	c. Note: value of radius and he Clear the concept of Class and Object	
Pre-requisite	Usage of cout, cin, different looping	
Pre-requisite	1	
Daniel de Con	statements along with struct, class a	and object.
Duration for	2 Hours	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	skill of tools and technologies to
PO(s) to be achieved	P06: Ability to use the techniques, s	skills and modern tools as
	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	inology of object oriented
	programming.	
	2. To understand memory mana	agement using constructors and
	destructors.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Prograr	nming with C++ by
	Balaguruswami.	
Post Laboratory	1. Give two points of differences	between structure and class
questions	2. How one can execute the sam	ie program without creating
	object?	
	3. What changes should be made	
	will calculates slant height at the time of object creation?	
	4. Which error shall be raised if we don't provide semicolon (;)	
	at the end of class? Assessment	
	Solution achieves the desired	Viva
	objective(s)	viva
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 6	Enrollment No <u>.</u> (Group : A
Practical Problem	Define a class baby with the following	
Tructicui i robiciii	a. Name	
	b. Date of Birth	
	c. Date on which bcg injection	n has to be given(60 days from
	date of birth)	
	d. Date on which polio drops	to be given.(45 days from date
	of birth)	1 1 1: . m
	Write a constructor to construct the	
	must find out bcg and polio drops d	
	main function define a baby and dis	
Objective(s)	Clear the concept of Class and Object	
Pre-requisite	Usage of cout, cin, different looping of	
	statements along with struct, class a	ınd object.
Duration for	2 Hours	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
70(): 1 11 1	solve industry problems.	1.01
PO(s) to be achieved	PO6: Ability to use the techniques, s	
CO(s) to be achieved	necessary for software development.	
co(s) to be achieved	1. To understand the basic terminology of object oriented programming.	
		gement using constructors and
	destructors.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences	between constructor and
questions	destructor.	
		Baby" message when program
	execution gets terminate?	
	3. What changes should be made in the logic so data should not	
	be accessible outside the class?	
	4. Which error shall be raised if we don't provide any access modifier to any data member and we try to call that member	
	from main function using object?	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Secured by the		
student		
Signature Date		

Practical No. 7	Enrollment No <u>.</u>	Group : A	
Practical Problem	Write a function that creates a vector	or of user-given size M using new	
	operator.		
Objective(s)	Clear the concept of new and delete	e operators.	
Pre-requisite	Usage of cout,cin, different looping	constructs and conditional	
	statements along with class & object	et.	
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	skill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	P06: Ability to use the techniques, s		
00(): 1 11 1	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic term	inology of object oriented	
	programming. 2. To understand memory mana	gement using constructors and	
	destructors.	igement using constructors and	
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between new and constructor.		
questions	2. How one can free the resources which have been allocated		
	during the program execution		
	3. What changes should be made in the logic so we can allocate		
	memory without using new operator?		
	4. What will happen if we don't free the resources that have been allocated during the program execution?		
	Assessment		
	Solution achieves the desired Viva		
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 8		Group : A
Practical Problem	Define a class Park with attributes le	ength, breadth and area. Define a
	suitable constructor and method to	display the object.
Objective(s)	Clear the concept of member functions and how to handle functions	
	with object.	
Pre-requisite	Usage of class, object and member f	unction.
Duration for	2 Hours	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, s	
	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	inology of object oriented
	programming.To understand memory mana	asmont using constructors and
	To understand memory mana destructors.	gement using constructors and
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
the problem	Balaguruswami.	
Post Laboratory	Give two points of differences between constructor and	
questions	member method.	between constructor and
questions	2. How one can set the initial value of all data members of	
	class?	
	3. What changes should be made	e in the logic so that initial
	values will get printed at the time of object creation?	
	4. Which error shall be raised if we don't provide constructor	
	name same as class name?	
	Assessment	
	Solution achieves the desired	Viva
Out of Marks	objective(s) 10	5
Secured by the	10	3
student		
Signature		
Date		

Practical No. 9		Group : A	
Practical Problem	Define a class Room with attributes		
	a. Length		
	b. Breadth		
	c. Height d. Floor area		
	e. Wall area		
	f. No of fans		
	g. No of windows		
	h. No of doors		
	Define a suitable constructor and m	ethod to display the details of a	
	room. Assume that 20% of the total	wall area is occupied by doors	
	and windows.		
Objective(s)	Clear the concept of member function	ons and how to handle functions	
	with object.		
Pre-requisite	Usage of class, object and member f	unction.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s		
22()	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic terminology of object oriented		
	programming.To understand memory management using constructors and		
	destructors.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving		Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	9	hetween object and	
questions	Give two points of differences between object and constructor.		
questions	2. How one can access the private data of class?		
	3. What changes should be made in the logic so that initial		
	values of one object will get assign to another object?		
	4. Which error shall be raised if we don't provide destructor		
	name same as class name?		
	Assessment	Vivo	
	Solution achieves the desired objective(s)	Viva	
Out of Marks	10	5	
Secured by the	-		
student			
Signature			
Date			

Practical No. 10	Enrollment No. (Group : A
Practical Problem	Create two classes TC and TF which	
	TC stores temperature in Celsius an	
	program that can read values for the	e class objects and add one object
	of TC with another object of TF.	
	Use a friend function to carry out the addition operation. The object	
	that stores the results may be a TC object or TF Object, depending on	
	the units in which the result is required. The display should be in the format	
	depending on the object on display	of Ceisius of Famelmen
Objective(s)	Clear the concept of friend function	
Pre-requisite	Usage of class, object and member f	unction
Duration for	2 Hours	unction.
	Z Hours	
completion	DECO To an idea di annaisale	1:11 - (1 - 1 1 1 - 1 - 1 - 1 - 1 - 1
PEO(s) to be achieved	PEO2: To provide quality practical s	Kill of tools and technologies to
PO(s) to be achieved	solve industry problems. P06: Ability to use the techniques, s	kills and modern tools as
ro(s) to be achieved	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	
co(s) to be demeved	programming.	notogy of object offenced
	2. To understand memory mana	gement using constructors and
	destructors.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
-	Balaguruswami.	
Post Laboratory	1. Give two points of differences	between virtual function and
questions	friend function?	
4	2. How one can one set the defa	ult value to the function
	parameter?	
	3. What changes should be made in the logic so that we can	
	carry out subtraction operation?	
	4. Which error shall be raised if we don't provide forward	
	declaration of class when we are implementing concept of	
	Friend function? Assessment	
	1100 0001110110	¥72_
	Solution achieves the desired objective(s)	Viva
Out of Marks	10	5
Secured by the	10	
student		
Signature		
Date		

Practical No. 11	Enrollment No.	Group : A
Practical Problem		
Practical Problem	Write a menu driven program that can perform the following functions on strings. (Use overloaded operators where possible). (Do	
	not use predefined string class)	
	a. Compare two strings for equ	iality (operator)
	b. Check whether first string is	
	operator)	sinanci than the second (-
Objective(s)	Clear the concept of operator overlo	oading.
Pre-requisite	Usage of class, object and member f	unction.
Duration for	1 Hours	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, s	
	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term:	inology of object oriented
	programming.	
	2. To understand memory mana	gement using constructors and
	destructors.	c 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	3. To understand the concept of polymorphism and implement	
	static (compile time) pol	ymorphism in programs by
Solution must contain	overloading operators.	
Nature of submission	Program and Output	
	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between function overloading	
questions	and operator function?	
	2. How one can overload (: :) op	
	3. What changes should be made	e in the logic so that we can
	concatenate two strings?	
	4. Which error shall be raised if	
	function to concatenate two s	trings?
	Assessment	<u>, </u>
	Solution achieves the desired	Viva
Out of Marks	objective(s)	5
Secured by the	10	3
student		
Signature		
Date		

	oolozos. Object offented flog	
Practical No. 12	Enrollment No <u>.</u>	Group : A
Practical Problem	Write a program to create a class called Float. Display the addition of two Float objects.	
Objective(s)	Clear the concept of operator overloading.	
Pre-requisite	Usage of class, object and member f	unction.
Duration for	1 Hours	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as
	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	nology of object oriented
	programming.	
	2. To understand memory mana destructors.	gement using constructors and
		f polymorphism and implement
		ymorphism in programs by
	overloading operators.	, morphism in programs by
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between operator function and	
questions	cast operator function?	
	2. How one can overload (->) operator?	
	3. What changes should be made in the logic so that we can	
	divide two Float objects?	
	4. Which error shall be raised if we don't provide return type in operator function?	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	*****
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 13	Enrollment No.	Group : A	
Practical Problem	Write a tree class to represent the		
		following attributes:	
	a.) Tree Code b.)Height c.)Base Width	
	Write a method annual Update(), v	-	
	width and the amount spent so far		
	Define a Mango class which is a de		
	addition to the attributes of a Tree	e, the mango class has yield	
	attribute. Override the displayTre	e() and annualUpdate() methods	
	suitably.		
	A Garden has two trees and two M		
	Garden and create these trees and	l display them.	
Objective(s)	Clear the concept of Inheritance.		
Pre-requisite	Usage of class, object and member	function, function overriding,	
	access modifiers.		
Duration for completion	2 Hours		
PEO(s) to be achieved	PEO2: To provide quality practica	l skill of tools and technologies to	
	solve industry problems.	G	
PO(s) to be achieved	PO6: Ability to use the techniques	, skills and modern tools as	
	necessary for software developme		
CO(s) to be achieved	1. To understand the basic term	minology of object oriented	
	programming.		
	2. To understand memory management using constructors		
	and destructors.		
		3. To understand the concept of polymorphism and implement static (compile time) polymorphism in programs	
		me) polymorphism in programs	
	by overloading operators.		
		ent the concept of inheritance	
Solution must contain	and overriding functions. Program and Output		
Nature of submission	Handwritten		
References for solving	1 1 111	Johnno 1 Mastering Country	
_		Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Progr	amming with C++ by	
n	Balaguruswami.		
Post Laboratory		es between multiple inheritance	
questions		and multilevel inheritance?	
	2. How one can inherit tree cla		
	3. What changes should be ma class cannot use attributes a	de in the logic so that mango	
	4. Which error shall be raised		
	modifiers for inheritance?	ii we don t provide access	
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)	****	
Out of Marks	10	5	
II OUL UI MAI NO		-	
Secured by the student			
Secured by the			

Practical No. 14	Enrollment No.	Group : A
Practical Problem	Create a base class called shape. U	
1 1 deciedi i 1 obiem	type values that could be use to co	
	two specific classes called triangle and rectangle from the base	
	shape. Add get_data() member function to the base class to	
	compute and display the area of figure. Make display_area() as a	
	virtual function and redefine this function in the derived classes to	
	suit their requirements.	
	Using these classes design a program that will accept dimensions	
	of the triangle or a rectangle inter	activly and display the area.
Objective(s)	Clear the concept of Virtual Functi	
Pre-requisite	Usage of class, object and member	function, function overriding,
•	access modifiers and inheritance.	,
Duration for completion	1 Hours	
PEO(s) to be achieved	PEO2: To provide quality practica	l skill of tools and technologies to
1 20(3) to be achieved	solve industry problems.	i sam of tools and technologies to
PO(s) to be achieved	PO6: Ability to use the techniques	skills and modern tools as
- 5(0) to be demicred	necessary for software developme	
CO(s) to be achieved	1. To understand the basic term	
	programming.	orogy or object orrented
	2. To understand memory mar	nagement using constructors
	and destructors.	
	3. To understand the con	cept of polymorphism and
	implement static (compile time) polymorphism in programs	
	by overloading operators.	
	4. To understand and implement the concept of inheritance	
	and overriding functions.	
		dynamic polymorphism using
	virtual functions, overriding functions and abstract class.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	Give two points of differences between virtual function and	
questions	pure virtual function?	
4.504010	2. How one can access the cur	rent copy of base class by
	calling function using derive class object?	
	3. What changes should be ma	
	display_area() method can c	alculate area of circle?
	4. Which error shall be raised	-
	keyword to create pure virt	ual function?
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Marks Secured		
Signature		
Date		

Practical No. 15	Enrollment No. (Group : A	
Practical Problem	Write a program which reads a text from ke		
	the following information on the screen in		
	a.) Number of lines. b.) Number of words.		
	c.) Number of characters. d.) String should	be left - justified and	
	the numbers should be right - justified in a	suitable field width.	
Objective(s)	Learn how to format output using i/o funct	ions.	
Pre-requisite	Usage of class, object and member function	Usage of class, object and member function, function overriding,	
	access modifiers, inheritance and formatting	g function and header	
	files.		
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical skill of t	ools and technologies to	
120(b) to be demoted	solve industry problems.	oois and teemiologies to	
PO(s) to be achieved	P06: Ability to use the techniques, skills an	d modern tools as	
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology	of object oriented	
	programming.		
	2. To understand memory management	using constructors	
	and destructors.		
	3. To understand the concept of		
	implement static (compile time) poly	morphism in programs	
	by overloading operators.	concept of inharitance	
	4. To understand and implement the	concept of inneritance	
	and overriding functions.To understand concept of dynamic polymorphism using		
	virtual functions, overriding functions and abstract class.		
	6. To understand I/O operations and h		
	classes and able to develop program		
	I/O operations.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming v	with C++ by	
_	Balaguruswami.		
Post Laboratory	1. Give two points of differences between get() and put() Output Description:		
questions	function of istream and ostream.		
4	2. How do the I/O facilities in C++ differ from that in C?		
	3. What changes should be made in the logic so that we can		
	calculate how many consonant are th	-	
	4. Which error shall be raised if we don't provide iomanip		
	header file in this program?		
	Assessment		
	Solution achieves the desired bjective(s)	Viva	
Out of Marks	10	5	
Marks Secured			
Signature			
Date			

	0010203. Object Offenteu i rogrammin		
Practical No. 16		Group : A	
Practical Problem	Create on Employee class which is inherite	d by FileHandle class.	
	Using FileHandle class store the information	n about employees in	
	sorted order of their employee numbers in	the file. Read an	
	employee number from the keyboard and display the		
	corresponding employee details.		
Objective(s)	Clear the concepts of handling file in C++		
Pre-requisite	Usage of class, object and member function	, function overriding,	
_	access modifiers, inheritance and formattir	ng function and header	
	files, file classes for I/O in file.	8	
Duration for completion			
_		1 1 1 1 1 1 1	
PEO(s) to be achieved	PEO2: To provide quality practical skill of t solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, skills an	d modern tools as	
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology	of object oriented	
	programming.		
	2. To understand memory management	t using constructors	
	and destructors.		
	3. To understand the concept of		
		implement static (compile time) polymorphism in programs	
	by overloading operators.		
	4. To understand and implement the concept of inheritance		
	and overriding functions.		
	5. To understand concept of dynamic polymorphism using		
	virtual functions, overriding functions and abstract class.		
	6. To understand I/O operations and hierarchy of File Stream		
	classes and able to develop programs to perform File and		
	I/O operations.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1	, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming	with C++ by	
_	Balaguruswami.		
Post Laboratory	Give two points of differences between ostraem and		
questions	ofstream?		
questions	2. How one can create a new file usinf	program?	
	3. What changes should be made in the logic so that if file		
	already exists, it should delete all content of that file at the		
	time of file creation?		
	4. Which header file we need to include	for file handling?	
	Assessment		
	Solution achieves the desired bjective(s)	Viva	
Out of Marks	10	5	
Marks Secured	10	J	
 			
Signature			
Date			

Practical No. 1	Enrollment No <u>.</u>		Group : B
Practical Problem	Write a program to read the values of a, b and c from the user and		
	display the value of x, where, $\mathbf{x} = \mathbf{a} / \mathbf{b} - \mathbf{c}$		
	Test your program for the following values:		
	a. a=250, b=85, c= 25		
	b. A=300, b=70, c=70		
Objective(s)	Want to make students familiar with	n C++ environment and	l with cin
	and cout statements.		
Pre-requisite	Usage of cout and cin objects.		
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and techno	logies to
	solve industry problems.		
PO(s) to be achieved	P06: Ability to use the techniques, s		as
CO(-) to be a different	necessary for software developmen		
CO(s) to be achieved	2. To understand the basic termi	nology of object orien	itea
Solution must contain	Program and Output	programming.	
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
the problem	Balaguruswami.		
Post Laboratory		haturaan cout and nri	ntf
questions	5. Give two points of differences between cout and printf statements.		
questions	6. How one can take input from	ıser in C++?	
	7. What changes should be made		e value of
	x always returns positive valu		
	8. Which error shall be raised if we use printf statements		
	instead of cout?		
	Assessment		1
	Solution achieves the desired	Viva	
Out of Marks	objective(s)	5	
Secured by the	10	3	
student			
Signature			
Date		_	

Practical No. 2	Enrollment No <u>.</u>	Group : B
Practical Problem	Write a program to take input of number. If the number is even, print	
	its square value, otherwise print its cube value.	
Objective(s)	Want to make students familiar with	n C++ environment and with cin
	and cout statements.	
Pre-requisite	Usage of cout and cin objects.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to
PO(s) to be achieved	P06: Ability to use the techniques, s necessary for software developmen	
CO(s) to be achieved	To understand the basic term programming.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel - Vo	lume 1, Mastering C++ by
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between cin and scanf	
questions	statements.	
	2. How one can take input from user in C++?	
	3. What changes should be made in the logic so that the displays	
	forth root value if number is even else displays number with message "odd number".	
	4. Which error shall be raised if we use scanf statements instead	
	of cin?	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Secured by the student		
Signature		
Date		

Practical No. 3	Enrollment No <u>.</u>	Group : B
Practical Problem	Write a program to take input of an	integer value from keyboard and
	display on the screen "WELL DONE" that many times.	
Objective(s)	Clear the concept of conditional stat	ements and loops.
Pre-requisite	Usage of cout,cin, different looping of	constructs and conditional
	statements.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	P06: Ability to use the techniques, s	
CO(-) to be a different	necessary for software developmen	
CO(s) to be achieved	To understand the basic terming programming.	inology of object oriented
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Vo	lume 1 Mastering C++ by
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Apart from for looping construct, which looping construct can	
questions	we use to solve this problem?	
1	2. What is difference between dowhile and while looping	
	contructs?	
	3. What changes should be made in the logic so that it prints	
	"WELLDONE" one times less than inputed number? 4. Which output shall be displayed if we write cout as follow?	
	4. Which output shall be displayed if we write cout as follow? Cout<<"WELLDONE i ", where i is inputed value.	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Secured by the		
Signature		
Signature Date		
Date	<u> </u>	

Practical No. 4	Enrollment No <u>.</u>	Group : B
Practical Problem	Write a program to generate n lines of the following pattern on the	
	computer screen:	
	1	
	121	
	12321	
	1234321	
Objective(s)	Clear the concept of conditional stat	ements and loops.
Pre-requisite	Usage of cout, cin, different looping of	constructs and conditional
	statements.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	P06: Ability to use the techniques, s	
60(). 1 1: 1	necessary for software developmen	
CO(s) to be achieved	2. To understand the basic term	inology of object oriented
Solution must contain	programming. Program and Output	
Nature of submission		
	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between for and dowhile() loop constructs.	
questions	2. How one can develop the same program without using for	
	construct?	te program without using for
	3. What changes should be made	e in the logic so that the same
	program prints the same patte	
	*	
	* *	
	* * * *	
	4. Which error shall be raised if	d'
	in for loop construct?	we don't provide any condition
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 5	Enrollment No <u>.</u>	Group : B
Practical Problem	Write a program to input the radius	of a circle and find its area,
	diameter and circumference using class called Radius. The class	
	Radius will have following attributes and methods	
	a. radius	
	b. pi =3.14	
	c. calculateArea()	
	d. calculateDiameter()	
	e. calculateCircumfere	nce()
Objective(s)	Clear the concept of Class and Object	
Pre-requisite	Usage of cout,cin, different looping of	
	statements along with struct, class a	and object.
Duration for	2 Hours	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, s	
CO(s) to be achieved	necessary for software developmen	
Co(s) to be achieved	 To understand the basic terminology of object oriented programming. 	
		agement using constructors and
	destructors.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
-	Balaguruswami.	
Post Laboratory	1. Give two points of differences between structure and class	
questions	2. How one can execute the same program without creating	
	object?	
	3. What changes should be made in the logic so that program	
	will calculates area of circle at	
	4. Which error shall be raised if we don't provide semicolon (;) at the end of class?	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	1174
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 6	Enrollment No <u>.</u>	Group : B
Practical Problem	Write a program that will ask for a	measurement in Feet and
	display it in Inches using a class called measurement and member	
	functions.	
Objective(s)	Clear the concept of Class and Object	ts.
Pre-requisite	Usage of cout,cin, different looping of	constructs and conditional
	statements along with struct, class a	nd object.
Duration for	2 Hours	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	P06: Ability to use the techniques, s	
CO(s) to be achieved	necessary for software developmen 1. To understand the basic termi	t.
co(s) to be achieved	programming.	nology of object of lented
	2. To understand memory manage	gement using constructors and
	destructors.	3
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between constructor and	
questions	destructor.	,
	2. How one can print "Bye Bye" message when program	
	execution gets terminate? 3. What changes should be made in the logic so data should not	
	be accessible outside the class?	
	4. Which error shall be raised if we don't provide any access	
	modifier to any data member and we try to call that member	
	from main function using object?	
	Assessment	
	Solution achieves the desired	Viva
Out of Marks	objective(s) 10	5
Secured by the	10	3
student		
Signature		
Date		

Practical No. 7	Enrollment No <u>.</u>	Group: B
Practical Problem	A book shop maintains the invento	•
	the shop. The list includes the details such as Author, Title, Price,	
	Publisher & Stock position. Whene	
	sales person inputs the title and au	
	list & display whether it is available	-
	message is displayed. If it is, then the	
	and request for the number of co	
	copies are available, the total c	
	displayed; otherwise the message '	
	displayed. Design a system using a	-
	member functions & constructors.	
	to allocate memory space required.	-
	go and outer morner, space required.	
Objective(s)	Clear the concept of new and delete	
Pre-requisite	Usage of cout,cin, different looping of	
	statements along with class & objec	t.
Duration for	1 Hour	
completion		
PEO(s) to be achieved	<peo and="" description="" no.=""></peo>	
PO(s) to be achieved	<po and="" description="" no.=""></po>	
CO(s) to be achieved	1. To understand the basic terminology of object oriented	
	programming.	
	2. To understand memory mana destructors.	gement using constructors and
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Vo	Jume 1 Mastering C++ hy
the problem	Venugopal, Object Oriented Program	-
the problem	Balaguruswami.	mining with Grandy
Post Laboratory	3	hetween new and constructor
questions	 Give two points of differences between new and constructor. How one can free the resources which have been allocated 	
questions	during the program execution	•
		e in the logic so we can allocate
	memory without using new o	
	4. Which will happen if we don't	
	been allocated during the prop	gram execution?
	Solution achieves the desired	Viva
	objective(s)	VIVA
Out of Marks	10	5
Secured by the	-	-
student		
Signature		
Date		

Practical No. 8	Enrollment No <u>.</u>	Group: B	
Practical Problem	_		
1 ractical r robiciii	Define a class to represent a bank account. Include the following members:		
	Data members		
	a. Name of the depositor		
	b. Account number		
	c. Type of Account		
	d. Balance amount in the a	ccount	
	Member functions	ccount	
	a. To assign initial values		
	b. To deposit an amount	6 1 1 1 1 1	
	c. To withdraw an amount		
	d. To display name and bal		
	Write a main program to test the pr	ogram	
Objective(s)	Clear the concept of member function	ons and how to handle functions	
	with object.		
Pre-requisite	Usage of class, object and member f	unction.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical skill of tools and technologies to		
	solve industry problems.		
PO(s) to be achieved	P06: Ability to use the techniques, skills and modern tools as		
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology of object oriented		
	programming.	and	
	2. To understand memory mana destructors.	gement using constructors and	
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Vo	hlumo 1 Mactoring C++ by	
the problem		-	
the problem	Venugopal, Object Oriented Programming with C++ by		
Doot I also and to ano	Balaguruswami.	Data and the state of	
Post Laboratory	 Give two points of differences member method. 	between constructor and	
questions	2. How one can set the initial va	alue of all data members of	
	class?	and of all data members of	
	3. What changes should be made	e in the logic so that initial	
	values will get printed at the t	<u> </u>	
	4. Which error shall be raised if		
	name same as class name?		
	Assessment		
1.1			
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks		Viva 5	
Secured by the	objective(s)		
Secured by the student	objective(s)		
Secured by the	objective(s)		

Practical No. 9	Enrollment No <u>.</u>	Group : B
Practical Problem	Write a class to represent a vector	
	member function to perform the fol	lowing tasks:
	To create the vector	
	To modify the value of a given of	element
	To multiply by a scalar value	
	To display the vector in the for	m (10, 20,30,)
	Write a program to test your class	
Objective(s)	Clear the concept of member function	ons and how to handle functions
Objective(s)	with object.	ons and now to namine functions
Pre-requisite	Usage of class, object and member f	unation
	·	unction.
Duration for	2 Hours	
completion	Proc m	1.11 6. 1. 1. 1. 1. 1.
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	skill of tools and technologies to
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as
1 O(3) to be deficed	necessary for software developmen	
CO(s) to be achieved	To understand the basic terminology of object oriented	
	programming.	
	2. To understand memory mana	gement using constructors and
	destructors.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Vo	lume 1, Mastering C++ by
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences	between object and
questions	constructor.	
	2. How one can access the private data of class?	
	3. What changes should be made in the logic so that initial	
	values of one object will get assign to another object? 4. Which error shall be raised if we don't provide destructor	
	4. Which error shall be raised if name same as class name?	we don't provide destructor
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	Viva
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

	outuzus. Object officiated frog	1 4111111115
Practical No. 10	Enrollment No <u>.</u>	Group : B
Practical Problem	Create two classes DM and DB which store the value of distance. DM stores distances in meters and centimeter and DB in feet and inches. Write a program that can read values for the class objects and add one object of DM with another object of DB. Use a friend function to carry out the addition operation. The object that stores the results may be a DM object or DB Object, depending on the units in which the result are required.	
	The display should be in the forma centimeters depending on the obje	
Objective(s)	Clear the concept of friend function	
Pre-requisite	Usage of class, object and member f	unction.
Duration for	2 Hours	********
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to
PO(s) to be achieved	P06: Ability to use the techniques, skills and modern tools as necessary for software development.	
CO(s) to be achieved	 To understand the basic terminology of object oriented programming. To understand memory management using constructors and destructors. 	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel - Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by Balaguruswami.	
Post Laboratory questions	 Give two points of differences between virtual function and friend function? How one can one set the default value to the function parameter? What changes should be made in the logic so that we can carry out subtraction operation? Which error shall be raised if we don't provide forward declaration of class when we are implementing concept of Friend function? 	
	Assessment	
	Solution achieves the desired objective(s)	Viva
Out of Marks	10	5
Secured by the student		
Signature		
Date		

Practical Problem Write a program to overload stream operators for reading or displaying contents of vector class's object as follow c. Cin >> v1; cout << v2	Practical No. 11	Enrollment No.	Group : B	
displaying contents of vector class's object as follow c. Cin >> v1; cout << v2				
C. Cin >> v1; cout << v2				
Pre-requisite Usage of class, object and member function.				
Duration for completion PEO(s) to be achieved PEO2: To provide quality practical skill of tools and technologies to solve industry problems. PO(s) to be achieved Po6: Ability to use the techniques, skills and modern tools as necessary for software development. CO(s) to be achieved 1. To understand the basic terminology of object oriented programming. 2. To understand memory management using constructors and destructors. 3. To understand the concept of polymorphism and implement static (compile time) polymorphism in programs by overloading operators. Solution must contain Program and Output Nature of submission Handwritten References for solving the problem Venugopal, Object Oriented Programming with C++ by Balaguruswami. Post Laboratory Questions 1. Give two points of differences between function overloading and operator function? 2. How one can overload (::) operator? 3. What changes should be made in the logic so that we can add two object of vector? 4. Which error shall be raised if we don't overload operator function to add two vector objects? Assessment Solution achieves the desired objective(s) 5 Secured by the student Signature 5 Signature 5 Solution achieves the desired objective(s) 5 Signature 5 Solution achieves the desired objective(s) 5	Objective(s)	Clear the concept of operator overlo	ading.	
PEO(s) to be achieved PEO2: To provide quality practical skill of tools and technologies to solve industry problems. PO6: Ability to use the techniques, skills and modern tools as necessary for software development.	Pre-requisite	Usage of class, object and member f	unction.	
PEO(s) to be achieved PO(s) to be achieved by the student PO(s) to be achieved between the tools and technologies to polymorphism and implement achieves the desired PO(s) to be achieved by the student PO(s) to be achieved the techniques, skills and modern tools and m	Duration for	1 Hours		
Solve industry problems. PO6: Ability to use the techniques, skills and modern tools as necessary for software development.	completion			
Solve industry problems. PO6: Ability to use the techniques, skills and modern tools as necessary for software development.	PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
necessary for software development. CO(s) to be achieved		solve industry problems.	_	
CO(s) to be achieved	PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as	
programming. 2. To understand memory management using constructors and destructors. 3. To understand the concept of polymorphism and implement static (compile time) polymorphism in programs by overloading operators. Solution must contain Program and Output Nature of submission Handwritten References for solving the problem Venugopal, Object Oriented Programming with C++ by Balaguruswami. Post Laboratory questions 1. Give two points of differences between function overloading and operator function? 2. How one can overload (::) operator? 3. What changes should be made in the logic so that we can add two object of vector? 4. Which error shall be raised if we don't overload operator function to add two vector objects? Assessment Solution achieves the desired objective(s) Out of Marks 10 5 Secured by the student Signature				
2. To understand memory management using constructors and destructors. 3. To understand the concept of polymorphism and implement static (compile time) polymorphism in programs by overloading operators. Solution must contain Program and Output Handwritten Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by Venugopal, Object Oriented Programming with C++ by Balaguruswami. Post Laboratory questions 1. Give two points of differences between function overloading and operator function? 2. How one can overload (::) operator? 3. What changes should be made in the logic so that we can add two object of vector? 4. Which error shall be raised if we don't overload operator function to add two vector objects? Assessment Solution achieves the desired objective(s) Out of Marks Secured by the student Signature	CO(s) to be achieved		nology of object oriented	
destructors. 3. To understand the concept of polymorphism and implement static (compile time) polymorphism in programs by overloading operators. Program and Output Handwritten References for solving the problem Post Laboratory questions 1. Give two points of differences between function overloading and operator function? 2. How one can overload (::) operator? 3. What changes should be made in the logic so that we can add two object of vector? 4. Which error shall be raised if we don't overload operator function to add two vector objects? **Assessment** Solution achieves the desired objective(s) Out of Marks 10 5 Secured by the student Signature				
3. To understand the concept of polymorphism and implement static (compile time) polymorphism in programs by overloading operators. Solution must contain Program and Output Handwritten References for solving the problem Post Laboratory questions 1. Give two points of differences between function overloading and operator function? 2. How one can overload (::) operator? 3. What changes should be made in the logic so that we can add two object of vector? 4. Which error shall be raised if we don't overload operator function to add two vector objects? Assessment Solution achieves the desired objective(s) Out of Marks 10 5 Secured by the student Signature		I -	gement using constructors and	
static (compile time) polymorphism in programs by overloading operators. Solution must contain Program and Output Nature of submission Handwritten References for solving the problem Venugopal, Object Oriented Programming with C++ by Balaguruswami. Post Laboratory questions 1. Give two points of differences between function overloading and operator function? 2. How one can overload (::) operator? 3. What changes should be made in the logic so that we can add two object of vector? 4. Which error shall be raised if we don't overload operator function to add two vector objects? Assessment Solution achieves the desired objective(s) Out of Marks 10 5 Secured by the student Signature			f nolymorphism and implement	
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4. Which error shall be raised if we don't overload operator function to add two vector objects? Assessment Solution achieves the desired objective(s) Out of Marks Secured by the student Signature				
function to add two vector objects? Assessment Solution achieves the desired objective(s) Out of Marks 10 5 Secured by the student Signature				
Assessment Solution achieves the desired objective(s) Out of Marks 10 5 Secured by the student Signature		•		
Solution achieves the desired objective(s) Out of Marks 10 5 Secured by the student Signature				
Out of Marks 10 5 Secured by the student Signature			***	
Out of Marks 5 Secured by the student Signature			Viva	
Secured by the student Signature	Out of Marks		5	
student Signature		10	3	
Signature				
Date	Date			

Practical No. 12	Enrollment No.	Group : B
Practical Problem	Create a class index with overloaded	
	operators.	
Objective(s)	Clear the concept of operator overlo	ading.
Pre-requisite	Usage of class, object and member f	unction.
Duration for	1 Hours	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as
	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	inology of object oriented
	programming.	
	_	gement using constructors and
	destructors.	6 l l d : l
		f polymorphism and implement
	static (compile time) polymorphism in programs by overloading operators.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between operator function and	
questions	cast operator function?	
questions	2. How one can overload (->) or	erator?
	3. What changes should be made in the logic so that we can	
	divide two index objects?	
	4. Which error shall be raised if we don't provide return type in	
	operator function?	
	Assessment	
	Solution achieves the desired	Viva
Out of Marks	objective(s) 10	5
Secured by the	10	3
student		
Signature		
Date		

Practical No. 13	Enrollment No.	Group : B	
Practical Problem	An educational institution wishes to ma	•	
	employees. The database is divided into a number of classes whose		
	hierarchical relationships are shown in Figure. The figure also		
	shows the minimum information required		
	the classes and define functions to create the		
	individual as and when required		
	l dell l		
	code NAME		
	subject supplies	grante	
	publication		
	magadan erromat		
	other they were party.		
	1		
Objective(s)	Clear the concept of Inheritance.		
Pre-requisite	Usage of class, object and member function	. function overriding.	
	access modifiers.	, 1411-01-01-0 (0111-0111-0)	
Duration for completion	2 Hours		
•			
PEO(s) to be achieved	PEO2: To provide quality practical skill of t	oois and technologies to	
DO(a) to be a shipped	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, skills and modern tools as		
CO(a) to be achieved	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology of object oriented		
	programming.		
	2. To understand memory management and destructors.	using constructors	
	3. To understand the concept of	polymorphism and	
	implement static (compile time) poly		
	by overloading operators.	morphism in programs	
	4. To understand and implement the	concept of inheritance	
	and overriding functions.	concept of innertunite	
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving		ed Programming with	
the problem	Mastering C++ by Venugopal, Object Oriented Programming with		
_	C++ by Balaguruswami.		
Post Laboratory	1. Give two points of differences between hybrid inheritance		
questions	and hierarchical inheritance?		
	2. How one can inherit typist class by private accessibility?		
	3. What changes should be made in the logic so that casual class cannot use attributes and methods of typist class?		
	4. Which error shall be raised if we don't provide access modifiers for inheritance?		
	Assessment		
	achieves the desired objective(s)	Viva	
Out of Marks	10	5	
Secured by the student	10	J	
Signature			
Date			
	Enrollment No.	Croup , P	
Practical No. 14	Enrollment No <u>.</u>	Group : B	

	010203. Object Offenteu Frog	
Practical Problem	Create a base class called shape. I	
	type values that could be use to compute the area of figures. Derive	
	two specific classes called triang	
	shape. Add get_data() member	
	compute and display the area of	
	virtual function and redefine this	function in the derived classes to
	suit their requirements.	
		gram that will accept dimensions
	of the triangle or a rectangle inter	
Objective(s)	Clear the concept of Virtual Funct	
Pre-requisite	Usage of class, object and member	r function, function overriding,
	access modifiers and inheritance.	
Duration for completion	1 Hours	
PEO(s) to be achieved	PEO2: To provide quality practica solve industry problems.	_
PO(s) to be achieved	PO6: Ability to use the techniques	
	necessary for software developme	
CO(s) to be achieved	1. To understand the basic term	minology of object oriented
	programming.	
	2. To understand memory man	nagement using constructors
	and destructors.	sant of volumenthiam and
		ncept of polymorphism and ime) polymorphism in programs
	by overloading operators.	inie) polymorphism in programs
		ant the concept of inheritance
	4. To understand and implement the concept of inheritance and overriding functions.	
	5. To understand concept of dynamic polymorphism using	
	virtual functions, overriding functions and abstract class.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Progr	•
the problem	Balaguruswami.	anning with C++ by
Deat I de content	ŭ	
Post Laboratory	•	es between virtual function and
questions	pure virtual function? 2. How one can access the current copy of base class by	
	2. How one can access the cur calling function using derive	
	3. What changes should be ma	•
	display_area() method can d	
	4. Which error shall be raised	
	keyword to create pure virt	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	_
	10	5
Out of Marks	10	
Marks Secured	10	
	10	

Practical No. 15	Envolument No.	Group : B	
Practical Problem			
Practical Problem	Write a program to read a list containing it and cost interactively and produce a three		
	below.	columni output as snown	
	NAME CODE	COST	
	Turbo C++ 1001	250.95	
	C Primer 905	95.70	
	Note that the name and code are left – justi	_	
Ohio ativo (a)	- justified with a precision of two digits. Tr		
Objective(s)	Learn how to format output using i/o funct		
Pre-requisite	Usage of class, object and member function	_	
	access modifiers, inheritance and formatting	g function .	
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical skill of t	ools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, skills an	d modern tools as	
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology	of object oriented	
	programming.		
	2. To understand memory management	using constructors	
	and destructors.		
	3. To understand the concept of		
		implement static (compile time) polymorphism in programs	
	by overloading operators. 4. To understand and implement the concept of inheritance		
	and overriding functions.	concept of inneritance	
	5. To understand concept of dynamic	r nolymornhism using	
	virtual functions, overriding function		
	6. To understand I/O operations and hierarchy of File Stream		
	classes and able to develop programs to perform File and		
	I/O operations.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Mastering C++ by Venugopal, Object Orient	ed Programming with	
the problem	C++ by Balaguruswami.		
Post Laboratory	 Give two points of differences between 	en get() and nut()	
questions	function of istream and ostream.	on Sect and putty	
questions	2. How do the I/O facilities in C++ diffe	r from that in C?	
	3. What changes should be made in the		
	calculate how many consonant are th		
	4. Which error shall be raised if we don	't provide iomanip	
	header file in this program?		
	Assessment		
	Solution achieves the desired bjective(s)	Viva	
Out of Marks	10	5	
Marks Secured			
Signature			
Date			

Practical No. 16	Enrollment No.	Group : B	
Practical Problem	Write a program to delete the 6th line in a fi	ile. Do not change the 6 th	
	line to a blank line; delete it completely.	_	
Objective(s)	Clear the concepts of handling file in C++		
Pre-requisite	Usage of class, object and member function	, function overriding,	
_	access modifiers, inheritance and formattir	ng function and header	
	files, file classes for I/O in file.		
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical skill of t	ools and technologies to	
	solve industry problems.	oois and teennologies to	
PO(s) to be achieved	P06: Ability to use the techniques, skills an	d modern tools as	
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology	of object oriented	
	programming.	•	
	2. To understand memory management	t using constructors	
	and destructors.		
	3. To understand the concept of		
	implement static (compile time) poly	morphism in programs	
	by overloading operators.		
	4. To understand and implement the	concept of inneritance	
		and overriding functions.	
	5. To understand concept of dynamic polymorphism using virtual functions, overriding functions and abstract class.		
	6. To understand I/O operations and hierarchy of File Stream		
	classes and able to develop program		
	I/O operations.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1	, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming		
_	Balaguruswami.	·	
Post Laboratory	1. Give two points of differences between	en ostraem and	
questions	ofstream?		
questions	2. How one can create a new file using program?		
	3. What changes should be made in the logic so that if file		
	already exists, it should delete all content of that file at the		
	time of file creation?		
	4. Which header file we need to include	for file handling?	
	Assessment	, ·	
	Solution achieves the desired bjective(s)	Viva	
Out of Marks	10	5	
Marks Secured			
Signature Date			
		i l	

Practical No. 1	Enrollment No <u>.</u>	Group : C
Practical Problem	Write a C++ program that will ask for	or a temperature in Fahrenheit
	and display it in Celsius.	
Objective(s)	Want to make students familiar with	n C++ environment and with cin
	and cout statements.	
Pre-requisite	Usage of cout and cin objects.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as
	necessary for software developmen	
CO(s) to be achieved	To understand the basic terminology of object oriented programming.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between cout and printf	
questions	statements.	
	2. How one can take input from user in C++?.	
	3. What changes should be made	<u> </u>
	program generates the same output without using cout	
	statement? 4. Which error shall be raised if we use printf statements	
	instead of cout?	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 2	Enrollment No <u>.</u>	Group : C
Practical Problem	Write a program to take input of c	hoice (1 or 2). If the choice is 1,
	print the area of a circle otherwise print the perimeter of a circle.	
	Accept the radius of the circle from	the user
Objective(s)	Want to make students familiar with	n C++ environment and with cin
	and cout statements.	
Pre-requisite	Usage of cout and cin objects.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	P06: Ability to use the techniques, s	
606) . 1 . 1 . 1	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic temprogramming.	rminology of object oriented
	programming.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences	between cin and scanf
questions	statements.	
	2. How one can take input from user in C++?	
	3. What changes should be made in the logic so that the same	
	program takes the input from the user using a single line of code?	
	4. Which error shall be raised if we use scanf statements instead	
	of cin?	
Assessment		
	Solution achieves the desired	Viva
	objective(s)	_
Out of Marks	10	5
Secured by the student		
Signature		
Date		

Practical No. 3	Enrollment No <u>.</u>		Group : C
Practical Problem	Write a program that obtains the la	_	ee numbers.
	Take input of three numbers from the user.		
Objective(s)	Clear the concept of conditional stat	ements and loop	S.
Pre-requisite	Usage of cout,cin, different looping of	constructs and co	nditional
	statements.		
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.		o .
PO(s) to be achieved	PO6: Ability to use the techniques, s		tools as
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic ter	minology of obj	ect oriented
	programming.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Apart from If condition statements, which statements can we		
questions	use to solve this problem?		
	2. How one can compare two integers in C++?		
	3. What changes should be made		
	program checks the larger number from the given two integer values?		
	4. Which error shall be raised if we write condition as follow?		
	if(int $x=10 \&\& int y=20$)		
	Assessment		
	Solution achieves the desired	Vi	va
	objective(s)		
Out of Marks	10	Ţ	5
Secured by the student			
Signature			
Date			

	Enrollment No <u>.</u>	Group : C	
Practical Problem	WAP to generate 2n+1 lines of the fo	ollowing pattern on the computer	
	screen:		
	*		
	@@@		
	* ***		
	@@@@@@@		
Objective(s)	Clear the concept of conditional stat	ements and loops.	
Pre-requisite	Usage of cout, cin, different looping of	constructs and conditional	
	statements.	statements.	
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s		
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic ter	rminology of object oriented	
	programming.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Progran	nming with C++ by	
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between for and dowhile()		
questions	loop constructs.		
	2. How one can develop the same program without using for		
	construct?		
	3. What changes should be made in the logic so that the same program prints the same pattern as follow?		
	@		
	* *		
	@ @ @ * * * *		
	4. Which error shall be raised if we don't provide any condition		
	in for loop construct?	we don't provide any condition	
	Assessment		
	Solution achieves the desired	Viva	
Out of Max1	objective(s)	r r	
Out of Marks	10	5	
Secured by the student			
Signature			
Date			

Practical No. 5	Enrollment No <u>.</u>	Group : C	
Practical Problem	Write a program that will ask for a measurement in Meter and		
	display it in Centimetres using a class	ss called measurement and	
	member functions.		
Objective(s)	Clear the concept of Class and Object		
Pre-requisite	Usage of cout,cin, different looping of		
	statements along with struct, class a	ınd object.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	P06: Ability to use the techniques, s		
60(): 1 1: 1	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic termi	inology of object oriented	
		programming.	
	To understand memory management using constructors and destructors.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
•	Balaguruswami.		
Post Laboratory	1. Give two points of differences	between structure and class	
questions	2. How one can execute the sam		
	object?		
	3. What changes should be made in the logic so that program		
	will calculates measurement in centimeter at the time of		
	object creation?		
	4. Which error shall be raised if we don't provide semicolon (;) at the end of class?		
Assessment			
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 6	Enrollment No <u>.</u>	Group : C	
Practical Problem	A class called Television has the following attributes:		
	a. Make		
	b. Size of the screen		
	c. Date of purchase of the TV		
	d. Is it a color TV		
	Define a class Television. Define a m	ethod for displaying the	
	attribute values of a TV.		
Objective(s)	Clear the concept of Class and Object	ts.	
Pre-requisite	Usage of cout, cin, different looping of	constructs and conditional	
	statements along with struct, class a	and object.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to	
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as	
1 o(s) to be demeved	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic term		
	programming.		
	2. To understand memory management using constructors and		
	destructors.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between constructor and		
questions	destructor.		
	2. How one can print "Hello" message when program execution		
	gets start?		
	3. What changes should be made in the logic so data should not		
	be accessible outside the class? 4. Which error shall be raised if we don't provide any access		
	modifier to any data member and we try to call that member		
	from main function using object?		
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 7	Enrollment No <u>.</u>	Group : C	
Practical Problem	Create a class Counted that contains an int id. There should be		
	default constructor in class Counted. It should print its id and		
	message like "It is being created", when an object is being created		
	using new operator. It should also print its id and message like "It is		
	being destroyed", when object is be	ing destroyed using delete	
	operator.		
Objective(s)	Clear the concept of new and delete	operators.	
Pre-requisite	Usage of cout,cin, different looping of	constructs and conditional	
	statements along with class & objec	t.	
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to	
PO(s) to be achieved	PO6: Ability to use the techniques, s		
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology of object oriented		
	programming. 2. To understand memory management using constructors and		
	destructors.	gement using constructors and	
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences	between new and constructor.	
questions	2. How one can free the resourc		
	during the program execution		
	3. What changes should be made in the logic so we can allocate		
	memory without using new operator?		
	4. Which will happen if we don't free the resources that have been allocated during the program execution?		
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 8	Enrollment No.	Group : C	
Practical Problem	Write a program to create Student class with the following		
	attributes.		
	Register Number, Name of the student, Mark in Subject 1,		
	Mark in subject 2, Mark in subject 3, Total Marks		
	The total of the three marks must be calculated only when the student passes in all three subjects. The pass marks for each subject is 50. If a candidate fails in any one of the subjects, his total marks must be declared as 0. Using this conditions, write a constructor for this class. Write a method displayStudent() to display the details of the student object. In main method create an array of three Student objects and display the object details.		
Objective(s)	Clear the concept of member function with object.	ons and how to handle functions	
Pre-requisite	Usage of class, object and member f	unction.	
Duration	2 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to	
PO(s) to be achieved	PO6: Ability to use the techniques, s		
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic terminology of object oriented		
	programming. 2. To understand memory management using constructors and		
	destructors.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
the problem	Balaguruswami.		
Post Laboratory	9	hetween constructor and	
questions	Give two points of differences between constructor and member method.		
questions	2. How one can set the initial value of all data members of		
	class?		
	3. What changes should be made in the logic so that initial		
	values will get printed at the time of object creation?		
	4. Which error shall be raised if we don't provide constructor name same as class name?		
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 9	Enrollment No <u>.</u>	Group : C	
Practical Problem	Considered the Student class defined in the previous program(08),		
	write a method bestStudent() which	returns the student with the	
	highest total marks and print the detail of that student.		
Objective(s)	Clear the concept of member function	ons and how to handle functions	
	with object.		
Pre-requisite	Usage of class, object and member for	unction.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to	
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as	
	necessary for software developmen	t.	
CO(s) to be achieved	1. To understand the basic termi	nology of object oriented	
	programming.		
	To understand memory management using constructors and destructors.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
the problem	Balaguruswami.		
Post Laboratory	1. Give two points of differences	between object and	
questions	constructor.		
	2. How one can access the priva		
	3. What changes should be made in the logic so that initial		
	values of one object will get assign to another object? 4. Which error shall be raised if we don't provide destructor		
	name same as class name?		
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature Date			
Date			

Practical No. 10	Enrollment No.		Group : C
Practical Problem	Create two classes called Class_1 & Class_2. Class_1 will have private		
	attribute named int value1 & Class_2 will have private attribute		
	named int value2. Create one function named Swap(), which will swap the values of		
	value1 & value2 attributes of Class_1 & Class_2.		
Objective(s)	Clear the concept of friend function	1 & Class_2.	
Pre-requisite	Usage of class, object and member f	ınction	
Duration for	2 Hours	anetion.	
completion	2 110015		
_	DEO2 To an idea disconsiderale	1:11 - 641 14 -	-11
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kili of tools and te	echnologies to
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern	tools as
1 O(s) to be achieved	necessary for software developmen		10013 as
CO(s) to be achieved	1. To understand the basic term		oriented
	programming.		
	2. To understand memory mana	gement using con	structors and
	destructors.		
Solution must contain	Program and Output	Program and Output	
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between virtual function and		
questions	friend function?		
	2. How one can one set the default value to the function		
	parameter?		
	3. What changes should be made in the logic so that we can		
	carry out swap operation? 4. Which error shall be raised if we don't provide forward		
	declaration of class when we are implementing concept of Friend function?		
Assessment			
	Solution achieves the desired	Viv	a
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 11	Enrollment No.	Group : C	
Practical Problem		that can perform the following	
		paded operators where possible).	
	(Do not use predefined string cla	ss)	
	a. Reverse the string		
	b. Concatenate two strings	(+ operator)	
Objective(s)	Clear the concept of operator over		
Pre-requisite	Usage of class, object and member	er function.	
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practic	al skill of tools and technologies	
	to solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the technique	s, skills and modern tools as	
	necessary for software developm		
CO(s) to be achieved	1. To understand the basic ter	rminology of object oriented	
	programming.		
		nagement using constructors	
	and destructors.		
	3. To understand the con		
		oile time) polymorphism in	
Solution must contain	Program and Output	programs by overloading operators.	
	_		
Nature of submission		Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of difference		
questions	overloading and operator f		
	2. How one can overload (::)	•	
		ade in the logic so that we can	
		print the string object by overloading cout< </th	
	4. Which error shall be raised if we don't overload operator		
	function to reverse the string?		
	Assessment	***	
	Solution achieves the desired	Viva	
Out of Maries	objective(s) 10	5	
Out of Marks Secured by the	10	3	
student			
Signature			
Date			
Date			

5 years Integrated M.Sc (IT): 2nd Semester Practical Problem and Assessment Policy

Practical No. 12	Enrollment No <u>.</u>	Group : C
Practical Problem	Create a class FLOAT that contains one float data member. Overload all the four arithmetic operators so that they operate on the objects of FLOAT	
Objective(s)	Clear the concept of operator overlo	oading.
Pre-requisite	Usage of class, object and member f	unction.
Duration for	1 Hours	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as
	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	nology of object oriented
	 programming. To understand memory management using constructors and destructors. To understand the concept of polymorphism and implement static (compile time) polymorphism in programs by overloading operators. 	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
-	Balaguruswami.	
Post Laboratory	3	between operator function and
questions	cast operator function?	
1	2. How one can overload (->) operator?	
	3. What changes should be made in the logic so that we can	
	increment float objects by 1 value?	
	4. Which error shall be raised if we don't provide return type in	
	operator function?	
	Assessment	Viena
	Solution achieves the desired objective(s)	Viva
Out of Marks	10	5
Secured by the	10	3
student		
Signature		
Date		

Practical No. 13	Enrollment No <u>.</u> (0	Group : C	
Practical Problem	Consider a class network of below figure. The class master derives		
	information from both account and admin classes which in turn		
	derive information from the class person. Define all the four		
	classes and write a program to create update and display the		
	information contained in master objects		
	Person		
	Nama Code		
	Account		
	Account admin Pary experience		
	master name, code,		
	experience, pay		
Objective(s)	Clear the concept of Inheritance.		
Pre-requisite	Usage of class, object and member function	, function overriding,	
-	access modifiers.		
Duration for completion	2 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical skill of t	ools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, skills and	d modern tools as	
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology of object oriented		
	programming.		
	2. To understand memory management using constructors		
	and destructors.		
	3. To understand the concept of polymorphism and implement static (compile time) polymorphism in programs		
	implement static (compile time) polymorphism in programs by overloading operators.		
		concept of inharitance	
	4. To understand and implement the concept of inheritance and overriding functions.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Mastering C++ by Venugopal, Object Orient	ed Programming with	
_	C++ by Balaguruswami.	eu i i ograninning with	
the problem	, ,	on bubuid inhanitana	
Post Laboratory	1. Give two points of differences between hybrid inheritance and hierarchical inheritance?		
questions		rivate accessibility?	
	2. How one can inherit typist class by private accessibility?3. What changes should be made in the logic so that master		
	class cannot use attributes and methods of admin class?		
	4. Which error shall be raised if we don't provide access		
	modifiers for inheritance?		
	Assessment		
	achieves the desired objective(s)	Viva	
Out of Marks	10	5	
Secured by the student			
Signature			
Date			
Practical No. 14	Enrollment No. (Group : C	

	1010203. Object Offenteu Frog	
Practical Problem	Create a base class called shape. I	Use this class to store two double ompute the area of figures. Derive
		gle and rectangle from the base
		function to the base class to
		figure. Make display_area() as a
	virtual function and redefine this	
	suit their requirements.	
		gram that will accept dimensions
	of the triangle or a rectangle inter	
Objective(s)	Clear the concept of Virtual Funct	
Pre-requisite	Usage of class, object and member	function, function overriding,
	access modifiers and inheritance.	
Duration for completion	1 Hours	
PEO(s) to be achieved	PEO2: To provide quality practica solve industry problems.	l skill of tools and technologies to
PO(s) to be achieved	PO6: Ability to use the techniques	
	necessary for software developme	
CO(s) to be achieved	 To understand the basic terms programming. 	minology of object oriented
		nagement using constructors
	and destructors.	
		cept of polymorphism and
		ime) polymorphism in programs
	by overloading operators.	ant the concept of inhoustones
	and overriding functions.	nent the concept of inheritance
		dynamic polymorphism using
		g functions and abstract class.
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel –	Volume 1, Mastering C++ by
the problem	Venugopal, Object Oriented Progr	amming with C++ by
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between virtual function and	
questions	pure virtual function?	
	2. How one can access the cur	
	calling function using derive 3. What changes should be ma	•
	display_area() method can d	
	4. Which error shall be raised	
	keyword to create pure virt	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	_
Out of Marks	10	5
Marks Secured Signature		
Date		
Practical No. 15	Enrollment No <u>.</u>	Group : C
Practical Problem		rovide the following output
	specifications for printing float va	<u> </u>

5 years Integrated M.Sc (IT): 2nd Semester

Practical Problem and Assessment Policy 060010203: Object Oriented Programming

060	010203: Object Oriented Programmin	g
Objective(s)	 a. 15 column width. b. Right justified. c. 2 digits precision. d. Filling unused spaces with +. e. Showing trailing zeros. Learn how to format output using i/o funct	ions.
Pre-requisite	Usage of class, object and member function	
i i e i equisite	access modifiers, inheritance and formattin	_
Duration for completion	1 Hours	g function.
-		a ala and tachnalacias to
PEO(s) to be achieved	PEO2: To provide quality practical skill of to solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, skills and necessary for software development.	d modern tools as
CO(s) to be achieved	 To understand the basic terminology programming. To understand memory management and destructors. To understand the concept of implement static (compile time) poly by overloading operators. To understand and implement the and overriding functions. To understand concept of dynamic virtual functions, overriding function and h classes and able to develop program I/O operations. 	polymorphism and morphism in programs concept of inheritance polymorphism using s and abstract class. ierarchy of File Stream
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Mastering C++ by Venugopal, Object Orient	ed Programming with
the problem	C++ by Balaguruswami.	
Post Laboratory	1. Give two points of differences between	en get() and put()
questions	function of istream and ostream. 2. How do the I/O facilities in C++ differ from that in C? 3. What changes should be made in the logic so that we can calculate how many fraction points are there in input? 4. Which error shall be raised if we don't provide iomanip header file in this program?	
	Assessment	
	Solution achieves the desired bjective(s)	Viva
Out of Marks	10	5
Marks Secured		
Signature		
Date		

Practical No. 16	Enrollment No. (Group : C	
Practical Problem	A file contains a list of telephone numbers i	•	
	John 23456		
	Ahmed 34567		
	The name contains only one word and the names and telephone		
	number are separated by white spaces. Write a program to read		
	the file and output the list in two column		
	left-justified and the numbers right-justified.		
Objective(s)	Clear the concepts of handling file in C++		
Pre-requisite	Usage of class, object and member function	, function overriding,	
	access modifiers, inheritance and formatting function and header		
	files, file classes for I/O in file.		
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical skill of t	ools and technologies to	
	solve industry problems.	o .	
PO(s) to be achieved	P06: Ability to use the techniques, skills an	d modern tools as	
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology	of object oriented	
	programming.		
	To understand memory management and destructors.	t using constructors	
	3. To understand the concept of	nolymorphism and	
	implement static (compile time) poly		
	by overloading operators.	morphism in programs	
	4. To understand and implement the concept of inheritance		
	and overriding functions.		
	5. To understand concept of dynamic		
		virtual functions, overriding functions and abstract class. 6. To understand I/O operations and hierarchy of File Stream	
	, -	-	
	classes and able to develop program	ns to perform File and	
Solution must contain	I/O operations. Program and Output		
Nature of submission	Handwritten		
		Mactoring Call by	
References for solving	Thinking in C++ by Bruce eckel – Volume 1 Venugopal, Object Oriented Programming v	= -	
the problem		with t+ by	
Doct Laboratory	Balaguruswami.		
Post Laboratory	Give two points of differences between ostraem and ofstream?		
questions	2. How one can create a new file using	nrogram?	
	a. What changes should be made in the logic so that if file		
	already exists, it should delete all content of that file at the		
	time of file creation?		
	4. Which header file we need to include for file handling?		
	Assessment		
	Solution achieves the desired bjective(s)	Viva	
Out of Marks	10	5	
Marks Secured			
Signature			
Date			

Practical No. 1	Enrollment No <u>.</u>	Group : D
Practical Problem	Write a program to take input of tw	o numbers $m{m}$ and $m{n}$. Then displa
	first m multiples of n number.	
Objective(s)	Want to make students familiar with C++ environment and with cin	
	and cout statements.	
Pre-requisite	Usage of cout and cin objects.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to
PO(s) to be achieved	PO6: Ability to use the techniques, s necessary for software developmen	
CO(s) to be achieved	To understand the basic terminology of object oriented programming.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between cout and printf	
questions	statements.	
	2. How one can take input from user in C++?.	
	3. What changes should be made in the logic so that the same	
	program generates the same output in a single line? 4. Which error shall be raised if we use printf statements	
	instead of cout?	
Assessment		
	Solution achieves the desired Viva	
	objective(s)	
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 2	Enrollment No <u>.</u>	Group : D	
Practical Problem	Write a program using while loop to	reverse the digits of a given	
	number. (for example, If number is=12345 then output number is=		
	54321)		
Objective(s)	Want to make students familiar wit	h C++ environment and with cin	
	and cout statements.	and cout statements.	
Pre-requisite	Usage of cout and cin objects.		
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	P06: Ability to use the techniques, s		
40(): 1 11 1	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic terminology of object oriented		
Solution must contain	programming.		
	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Program	nming with C++ by	
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between cin and scanf		
questions	statements.		
	2. How one can take input from user in C++?		
	3. What changes should be made in the logic so that we can		
	reverse the inputed number up to (length of inputed number-		
	1) digits only?4. Which error shall be raised if we use scanf statements instead		
	of cin?		
Assessment			
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 3	Enrollment No.	Group : D
Practical Problem	_	•
Practical Problem	WAP that reads in a character <ch> from the keyboard and then displays one of the following messages:</ch>	
	a. If <ch> is a lower case alphabet, the message</ch>	
	"The upper case character corresponding to <ch> is"</ch>	
	b. If <ch> is an upper case alphabet, the message</ch>	
	"The lower case character co	
	c. If <ch> is not an alphabet, th</ch>	e message
	" <ch> is not an alpha</ch>	abet"
Objective(s)	Clear the concept of conditional stat	
Pre-requisite	Usage of cout,cin, different looping of	constructs and conditional
	statements.	
Duration for	1 hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
1 20 (0) 00 20 00000 00	solve industry problems.	or 1 00.00 arra 100 010 8.0 0 1 0
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as
	necessary for software development.	
CO(s) to be achieved	To understand the basic terminology of object oriented	
	programming.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Vo	lume 1, Mastering C++ by
the problem	Venugopal, Object Oriented Prograr	nming with C++ by
_	Balaguruswami.	
Post Laboratory	-	tements, which statements can
questions	we use to solve this proble	
questions	2. How one can take compare	
		ade in the logic so that the same
	program checks the choice	<ch> for special symbols and</ch>
	displays <ch> is Special Sy</ch>	
	4. Which error shall be raised	l if we write condition as follow?
	if(char ch="abc" && char cl	n="xyz")
	Assessment	
		¥7:
	Solution achieves the desired	Viva
Out of Marks	objective(s) 10	5
Secured by the	10	3
student		
Signature		
Date		
Date		

Practical No. 4	Enrollment No <u>.</u>	Group : D
Practical Problem	Write a program to take input of a n	
	then again input the number. Keep on doing so until the user enters a	
	positive number.	
Objective(s)	Clear the concept of conditional stat	ements and loops.
Pre-requisite	Usage of cout,cin, different looping of	constructs and conditional
	statements.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, s	
CO(s) to be achieved	necessary for software developmen 1. To understand the basic te	
Co(s) to be achieved	programming.	immology of object offented
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	8
Post Laboratory	Give two points of differences between for and dowhile()	
questions	loop constructs.	
	2. How one can develop the same program without using for	
	construct?	
	3. What changes should be made in the logic so that the same	
	program prints message as "Inputed number is negative" and asks for input again, else displays "number is positive".	
	4. Which error shall be raised if we don't provide any condition	
	in for loop construct?	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 5	Enrollment No <u>.</u>	Group : D	
Practical Problem	Define a class of employees. It should		
	name, address and number of dependents for the employee. It		
	should also contain functions to ins		
	employees. Define an array of 10 en		
	employees with more than two dependents.		
Objective(s)	Clear the concept of Class and Object		
Pre-requisite	Usage of cout, cin, different looping of		
	9	statements along with struct, class and object.	
Duration for	2 hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s		
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic terminology of object oriented		
	programming.		
	2. To understand memory management using constructors and		
6.1	destructors.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between structure and class		
questions	2. How one can execute the same program without creating		
_	object?		
	3. What changes should be made in the logic so that program		
	will calculates slant height at the time of object creation?		
	4. Which error shall be raised if we don't provide semicolon (;)		
	at the end of class?		
Assessment			
	Solution achieves the desired	Viva	
Ont of Man 1	objective(s)		
Out of Marks	10	5	
Secured by the student			
Signature			
Date			
Date			

Practical No. 6	Enrollment No <u>.</u>	Group : D	
Practical Problem	A class called Television has the foll	owing attributes:	
	e. Make		
	f. Size of the screen		
	g. Date of purchase of the TV		
	h. Is it a color TV		
	Define a class Television. Define a method for displaying the		
	attribute values of a TV		
Objective(s)	Clear the concept of Class and Object		
Pre-requisite	Usage of cout,cin, different looping constructs and conditional		
	statements along with struct, class a	ınd object.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to	
PO(s) to be achieved	P06: Ability to use the techniques, s	kills and modern tools as	
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology of object oriented		
	programming.		
	2. To understand memory management using constructors and		
Solution must contain	destructors. Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	Give two points of differences between constructor and destructor.		
questions	destructor. How one can print "Byo Byo Baby" mossage when program		
	2. How one can print "Bye Bye Baby" message when program execution gets terminate?		
	3. What changes should be made	in the logic so data should not	
	be accessible outside the class?		
	4. Which error shall be raised if we don't provide any access		
	modifier to any data member and we try to call that member		
	from main function using object?		
	Assessment		
	Solution achieves the desired objective(s)	Viva	
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 7	Enrollment No.	Group : D
Practical Problem	Create a class Counted that contain	s an int id. There should be
	default constructor in class Counted	. It should print its id and
	message like "It is being created", when an object is being created	
	using new operator. It should also p	rint its id and message like "It is
	being destroyed", when object is be	ng destroyed using delete
	operator.	
Objective(s)	Clear the concept of new and delete	operators.
Pre-requisite	Usage of cout, cin, different looping of	
1	statements along with class & object.	
Duration for	1 Hour	<u></u>
completion	111041	
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
1 20(3) to be definered	solve industry problems.	in or tools and technologies to
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as
	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	nology of object oriented
	programming.	
	2. To understand memory management using constructors and	
Calutian must santain	destructors.	
Solution must contain	Program and Output Handwritten	
Nature of submission		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between new and constructor.	
questions	2. How one can free the resources which have been allocated	
	during the program execution?	
	3. What changes should be made in the logic so we can allocate memory without using new operator?	
	4. Which will happen if we don't free the resources that have	
	been allocated during the program execution?	
Assessment		
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 8	Enrollment No.	Group : D	
Practical Problem	A house has a bed room, drawing ro	om, hall, dining room and	
	kitchen. It also has a Television. Other attributes of a house are door		
	no., date of construction, total plinth area and ground area. Define a		
	class House and define a suitable constructor and a method to		
	display the details of the house.		
Objective(s)	Clear the concept of member function	ons and how to handle functi	ons
	with object.		
Pre-requisite	Usage of class, object and member f	unction.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies	to
PO(s) to be achieved	P06: Ability to use the techniques, s		
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic term	nology of object oriented	
	programming.	tament using constructors	and
	To understand memory management using constructors and destructors.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
-	Balaguruswami.		
Post Laboratory	1. Give two points of differences between constructor and		
questions	member method.		
	2. How one can set the initial value of all data members of		
	class?		
	3. What changes should be made in the logic so that initial		
	values will get printed at the time of object creation? 4. Which error shall be raised if we don't provide constructor		
	name same as class name?		
Assessment			
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 9	Enrollment No <u>.</u>	Group : D	
Practical Problem	A Block is a collection of 4 Houses		
	area. Define a class. Create a Block in the main method and display		
	its details.		
	House a	House b	
	Park		
	House c	House d	
Objective(s)	Clear the concept of member function	ons and how to handle functions	
	with object.		
Pre-requisite	Usage of class, object and member for	unction.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as	
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic termi		
	programming.		
		gement using constructors and	
Colution must contain	destructors.		
Solution must contain Nature of submission	Program and Output Handwritten		
		1 4 M	
References for solving	Thinking in C++ by Bruce eckel – Vo		
the problem	Venugopal, Object Oriented Program	nming with C++ by	
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between object and		
questions	constructor.		
	2. How one can access the private data of class? What changes should be made in the logic so that initial		
	3. What changes should be made in the logic so that initial values of one object will get assign to another object?		
	4. Which error shall be raised if we don't provide destructor name same as class name?		
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 10	Enrollment No.	3	Group : D	
Practical Problem	Define Time class with string contai	ning seconds elap	sed till	
	midnight (12:00A.M) as a single data member. Write AddTime			
	function which adds two different T	ime objects and re	eturn a new	
	Time object. Write a DisplayNormal		onverts the time	
	in seconds and displays in normal fa	ishion HH:MM:SS.		
Objective(s)	Clear the concept of friend function			
Pre-requisite	Usage of class, object and member f	unction.		
Duration for	2 Hours			
completion				
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and te	chnologies to	
	solve industry problems.			
PO(s) to be achieved	PO6: Ability to use the techniques, s		tools as	
	necessary for software developmen			
CO(s) to be achieved	1. To understand the basic termi	nology of object	oriented	
	programming.			
	2. To understand memory mana	gement using con	structors and	
Calastian	destructors.			
Solution must contain	Program and Output			
Nature of submission	Handwritten			
References for solving	Thinking in C++ by Bruce eckel - Vo	_	•	
the problem	Venugopal, Object Oriented Programming with C++ by			
	Balaguruswami.			
Post Laboratory	1. Give two points of differences between virtual function and			
questions	friend function?			
	2. How one can one set the default value to the function			
	parameter?	والمرم والمرام والمرام		
	3. What changes should be made			
		carry out subtraction operation of two different time objects? 4. Which error shall be raised if we don't provide forward		
		•		
	declaration of class when we are implementing concept of Friend function?			
	Assessment			
	Solution achieves the desired	Viv	a	
	objective(s)			
Out of Marks	10	5		
Secured by the				
student				
Signature				
Date				

Practical No. 11	Enrollment No <u>.</u>	Group : D	
Practical Problem		s such that + provides push and -	
	provides pop operation.	provides pop operation.	
Objective(s)	Clear the concept of operator over	_	
Pre-requisite	Usage of class, object and member	er function.	
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practic to solve industry problems.	al skill of tools and technologies	
PO(s) to be achieved	P06: Ability to use the technique necessary for software developm	nent.	
CO(s) to be achieved	 To understand the basic terminology of object oriented programming. To understand memory management using constructors and destructors. To understand the concept of polymorphism and implement static (compile time) polymorphism in programs by overloading operators. 		
Solution must contain	Program and Output		
Nature of submission	Handwritten	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory questions	 Give two points of differences between function overloading and operator function? How one can overload (::) operator? What changes should be made in the logic so that we can print the stack object by overloading cout<<? Which error shall be raised if we don't overload operator function to push the value in stack? Assessment		
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the student			
Signature			
Date			

Practical No. 12	Enrollment No <u>.</u>	Group : D	
Practical Problem	Write a program to create a class called Float. Display the		
Objection (a)	multiplication of two Float objects.	. 11	
Objective(s)	Clear the concept of operator overlo	_	
Pre-requisite	Usage of class, object and member for	unction.	
Duration for	1 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to	
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as	
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic termi	nology of object oriented	
	programming.		
	2. To understand memory mana	gement using constructors and	
	destructors.	6 l l l d : l	
	3. To understand the concept of	monographism and implement with the serior of the serior o	
	overloading operators.	ymorphism in programs by	
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
the problem	Balaguruswami.		
Post Laboratory	1. Give two points of differences between operator function and		
questions	cast operator function?	•	
	2. How one can overload (->) op		
	3. What changes should be made		
	increment float objects by 1 va		
	4. Which error shall be raised if	we don't provide return type in	
	operator function?		
Assessment			
	Solution achieves the desired	Viva	
0 1 634 3	objective(s)		
Out of Marks	10	5	
Secured by the student			
Signature			
Date			
Date			

Practical No. 13	Enrollment No <u>.</u>	Group : D	
Practical Problem	Create three class SocialNetwork, F		
	SocialNetwork class has data member		
	password; FaceBook class inherit the properties of SocialNetwork		
	class and it has data member like scrap m		
	Twitter class inherit the properties of Soc		
	members like twit message and followed operation	er and do the following	
	a. Insert data through derived class p	arameterized	
	constructor.	ar arricler izea	
	There are more than one user of FaceB	ook and Twitter so use	
	appropriate technique for creating user.		
Objective(s)	Clear the concept of Inheritance.		
Pre-requisite	Usage of class, object and member function	n, function overriding,	
	access modifiers.		
Duration for completion	2 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical skill of	tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, skills ar	nd modern tools as	
CO(-) to be a discord	necessary for software development.	-C-literate stanta	
CO(s) to be achieved	1. To understand the basic terminology of object oriented		
	programming. 2. To understand memory management using constructors		
	and destructors.	t using constituctors	
	3. To understand the concept o	f polymorphism and	
	implement static (compile time) pol	ymorphism in programs	
	by overloading operators.		
	4. To understand and implement the	concept of inheritance	
Solution must contain	and overriding functions.		
Nature of submission	Program and Output Handwritten		
		tod Drogramming with	
References for solving	Mastering C++ by Venugopal, Object Orien	teu riogianning with	
the problem	C++ by Balaguruswami.	on huhrid inhavitanas	
Post Laboratory	1. Give two points of differences betwee and hierarchical inheritance?	en nybria inneritance	
questions	2. How one can inherit typist class by private accessibility?		
	3. What changes should be made in the logic so that twitter		
	class cannot use attributes and methods of socialnetwork		
	class?		
	4. Which error shall be raised if we don't provide access		
	modifiers for inheritance? Assessment		
	achieves the desired objective(s)	Viva	
Out of Marks	10	5	
Secured by the student			
Signature			
Date			

	010203. Object Offenteu Frog		
Practical Problem	Create a base class called shape. I		
	type values that could be use to compute the area of figures. Derive		
	two specific classes called triangle and rectangle from the base		
	shape. Add get_data() member		
	compute and display the area of		
	virtual function and redefine this	function in the derived classes to	
	suit their requirements.		
		Using these classes design a program that will accept dimensions of the triangle or a rectangle interactivly and display the area.	
Objective(s)	Clear the concept of Virtual Funct		
Pre-requisite	Usage of class, object and member	r function, function overriding,	
	access modifiers and inheritance.		
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practica solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques		
	necessary for software developme		
CO(s) to be achieved	1. To understand the basic term	minology of object oriented	
	programming.		
	2. To understand memory man	nagement using constructors	
	and destructors.	sant of volumenthiam and	
		ncept of polymorphism and ime) polymorphism in programs	
	by overloading operators.	inie) polymorphism in programs	
		ant the concept of inheritance	
	4. To understand and implement the concept of inheritance and overriding functions.		
	5. To understand concept of dynamic polymorphism using		
	virtual functions, overriding functions and abstract class.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Progr	•	
the problem	Balaguruswami.	anning with C++ by	
Deat I de content	ŭ		
Post Laboratory	•	es between virtual function and	
questions	pure virtual function? 2. How one can access the cur	rent cony of bace class by	
	calling function using derive		
	3. What changes should be ma	•	
	display_area() method can d		
	4. Which error shall be raised		
	keyword to create pure virt		
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)	_	
	10	5	
Out of Marks	10		
Marks Secured	10		
	10		

5 years Integrated M.Sc (IT): 2nd Semester Practical Problem and Assessment Policy

060010203: Object Oriented Programming

	0010203: Object Oriented Programmir		
Practical No. 15		Group : D	
Practical Problem	Write a program which reads a text from keyboard and displays the following information on the screen in two columns: Number of lines, Number of words, Number of characters, String should be left – justified and the numbers should be right – justified in a suitable field width, and also fill unused space with		
	star (*)		
Objective(s)	Learn how to format output using i/o func	tions.	
Pre-requisite	Usage of class, object and member function	, function overriding,	
	access modifiers, inheritance and formatti	ng function .	
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical skill of t solve industry problems.	cools and technologies to	
PO(s) to be achieved	P06: Ability to use the techniques, skills an necessary for software development.		
CO(s) to be achieved	 To understand the basic terminology programming. To understand memory management and destructors. To understand the concept of implement static (compile time) poly by overloading operators. To understand and implement the and overriding functions. To understand concept of dynamic virtual functions, overriding functions and includes and all classes and able to develop programming the classes. 	t using constructors f polymorphism and ymorphism in programs concept of inheritance c polymorphism using as and abstract class. hierarchy of File Stream	
Solution must contain	Program and Output		
Nature of submission	Handwritten	· · · · · · · · · · · · · · · · · · ·	
References for solving	Mastering C++ by Venugopal, Object Orien	ted Programming with	
the problem	C++ by Balaguruswami.		
Post Laboratory questions	 Give two points of differences between get() and put() function of istream and ostream. How do the I/O facilities in C++ differ from that in C? What changes should be made in the logic so that we can calculate how many vovels are there in input? Which error shall be raised if we don't provide iomanip header file in this program? 		
	Assessment		
	Solution achieves the desired bjective(s)	Viva	
Out of Marks	10	5	
Marks Secured	=-		
Signature			
Date			

Practical No. 16	Enrollment No.	Group : D	
Practical Problem	Write a program to copy only lines beginn	ing with a user specified	
	character from file source.txt to destination		
Objective(s)	Clear the concepts of handling file in C++		
Pre-requisite	Usage of class, object and member function	, function overriding,	
_	1	access modifiers, inheritance and formatting function and header	
	files, file classes for I/O in file.	8	
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical skill of t	ools and tachnologies to	
r EO(s) to be achieved	solve industry problems.	oois and technologies to	
PO(s) to be achieved	PO6: Ability to use the techniques, skills an	d modern tools as	
	necessary for software development.	a modern tools as	
CO(s) to be achieved	1. To understand the basic terminology	of object oriented	
	programming.	01 05,000 01101100	
	2. To understand memory management	t using constructors	
	and destructors.	O .	
	3. To understand the concept of		
	implement static (compile time) poly	morphism in programs	
	by overloading operators.		
	4. To understand and implement the	concept of inheritance	
	and overriding functions.	1 1	
	5. To understand concept of dynamic polymorphism using		
	virtual functions, overriding functions and abstract class. 6. To understand I/O operations and hierarchy of File Stream		
	classes and able to develop program		
	I/O operations.	iis to perioriii riie and	
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1	Mastering C++ hy	
the problem	Venugopal, Object Oriented Programming		
the problem		With G++ by	
Doot Labour	Balaguruswami.		
Post Laboratory	1. Give two points of differences between	en ostraem and	
questions	ofstream? 2. How one can create a new file using program?		
	2. How one can create a new file using3. What changes should be made in the		
	already exists, it should delete all con		
	time of file creation?		
	4. Which header file we need to include	for file handling?	
	Assessment	J	
	Solution achieves the desired bjective(s)	Viva	
Out of Marks	10	5	
Marks Secured			
Signature			
Date			

Practical No. 1	Enrollment No <u>.</u>		Group : E
Practical Problem	WAP to input 10 numbers and then	display their sui	m and average.
	Also display the largest and the smallest of the numbers entered		
Objective(s)	Want to make students familiar with	n C++ environme	ent and with cin
	and cout statements.		
Pre-requisite	Usage of cout and cin objects.		
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and	technologies to
PO(s) to be achieved	P06: Ability to use the techniques, s necessary for software developmen		n tools as
CO(s) to be achieved	To understand the basic terming programming.		t oriented
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between cout and printf		
questions	statements.		
	2. How one can take input from user in C++?.		
	3. What changes should be made in the logic so that the same program generates smallest and largest value using a single function?		
	4. Which error shall be raised if	we use printf st	atements
	instead of cin?		
Assessment			
	Solution achieves the desired	V	iva
0 . 414 .	objective(s)		_
Out of Marks	10		5
Secured by the student			
Signature			
Date			
Date			

Practical No. 2	Enrollment No <u>.</u>	Group : E
Practical Problem	Write a program to convert a binary	number to its corresponding
	octal number.	
Objective(s)	Want to make students familiar with	n C++ environment and with cin
	and cout statements.	
Pre-requisite	Usage of cout and cin objects.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, s	
60(): 1 1: 1	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	nology of object oriented
Solution must contain	programming. Program and Output	
Nature of submission	Handwritten	
References for solving	1 1 111	lumo 1 Mactaring Cull by
the problem	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by Venugopal, Object Oriented Programming with C++ by	
the problem	Balaguruswami.	
Doct Laboratory	0	
Post Laboratory questions	1. Give two points of differences between cin and scanf statements.	
questions	2. How one can take input from user in C++?	
	3. What changes should be made in the logic so that the same	
	program takes the input from the user using a single line of	
	code?	
	4. Which error shall be raised if we use scanf statements instead	
	of cin? Assessment	
	Solution achieves the desired	Viva
	objective(s)	viva
Out of Marks	10	5
Secured by the	-	-
student		
Signature		
Date		

Practical No. 3	Enrollment No.		Group : E
Practical Problem	WAP to input a list of numbers and	then reverse th	is list of numbers
	without using a second array. E.g. if the original list contains		
	5,2,3,4,1,9, then after reversal the li	ist should contai	in 9,1,4,3,2,5
Objective(s)	Clear the concept of conditional stat	ements and loo	ps.
Pre-requisite	Usage of cout, cin, different looping of	constructs and c	onditional
	statements.		
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and	technologies to
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s		n tools as
CO(-) to be a shipe 1	necessary for software developmen		4 - 2 - 4 - 1
CO(s) to be achieved	1. To understand the basic terming programming.	inology of object	t oriented
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
the problem	Balaguruswami.		
Post Laboratory			
questions	1. Apart from If condition statements, which statements can we use to solve this problem?		
questions	2. How one can take compare two integers in C++?		
	3. What changes should be made in the logic so that the same		
	program sort the list in ascending order?		
	4. Which error shall be raised if we write condition as follow?		
	if(int x=10 && int y=20)		
	Assessment		
	Solution achieves the desired objective(s)	V	iva
Out of Marks	10		5
Secured by the	10		3
student			
Signature			
Date			

Practical No. 4	Enrollment No.	Group : E
Practical Problem	Write a program to generate n lines	of the following pattern on the
	computer screen:	
	1234321	
	12321	
	121	
	1	
Objective(s)	Clear the concept of conditional stat	ements and loops.
Pre-requisite	Usage of cout,cin, different looping of	constructs and conditional
	statements.	
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as
	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	nology of object oriented
	programming.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Vo	lume 1, Mastering C++ by
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences	between for and dowhile()
questions	loop constructs.	
	2. How one can develop the same program without using for	
	construct?	
	3. What changes should be made in the logic so that the same	
	program prints the same pattern but in descending order as follow?	
	1 1 1	
	121	
	12321	
	1234321	
	4. Which error shall be raised if	provide only three ; in for loop?
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 5	Enrollment No <u>.</u>	Group : E	
Practical Problem	Write a program that creates an Em	ployee class which contain	
	emp_code, name, designation and salary fields, and three constructor		
	one is default constructor, second constructor contain three filed		
	emp code, name and designation& if designation is clerk set salary of		
	Rs. 5000 if designation is peon set s		
	set salary of Rs. 10000 for others se		
	constructor contain four fileds emp		
Objective(c)	salary. Display information of emplo		
Objective(s)	Clear the concept of Class and Object		
Pre-requisite	Usage of cout,cin, different looping of		
_	statements along with struct, class a	ind object.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s		
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic termi	inology of object oriented	
	programming. 2. To understand memory management using constructors and		
	destructors.	igement using constructors and	
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Vo	lumo 1 Mastoring C + by	
_			
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences		
questions	2. How one can execute the sam	e program without creating	
	object? 3. What changes should be made	in the logic so that program	
		en program will get terminate?	
	4. Which error shall be raised if we don't provide semicolon (;) at the end of class?		
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

000010203: Object Oriented Programming	
	up : E
Practical Problem Write a program that create two class one is main method	
another is to represent a bank account that includes the fo	llowing
member:	
Data Members	
1. Owner name	
2. Account number	
3. Balance amount in the account	
Methods Members	
1. To assign initial values.	
2. To deposit an amount.	
3. To withdraw an amount after checking balance balance must be Rs.500.	e minimum
4. To Display the owner name and balance	
Objective(s) Clear the concept of Class and Objects.	
Pre-requisite Usage of cout,cin, different looping constructs and condition	onal
statements along with struct, class and object.	
Duration for 2 Hours	
completion	
PEO(s) to be achieved PEO2: To provide quality practical skill of tools and technology	ologies to
solve industry problems.	J
PO(s) to be achieved PO6: Ability to use the techniques, skills and modern tools	as
necessary for software development.	
CO(s) to be achieved 1. To understand the basic terminology of object orien	nted
programming.	
2. To understand memory management using constru-	ctors and
destructors.	
Solution must contain Program and Output	
Nature of submission Handwritten	
References for solving Thinking in C++ by Bruce eckel – Volume 1, Mastering C++	- by
	- by
References for solving Thinking in C++ by Bruce eckel – Volume 1, Mastering C++	- by
References for solving the problemThinking in C++ by Bruce eckel – Volume 1, Mastering C++ Venugopal, Object Oriented Programming with C++ by Balaguruswami.	
References for solving the problemThinking in C++ by Bruce eckel – Volume 1, Mastering C++ Venugopal, Object Oriented Programming with C++ by Balaguruswami.Post Laboratory1. Give two points of differences between constructor	
References for solving the problemThinking in C++ by Bruce eckel – Volume 1, Mastering C++ Venugopal, Object Oriented Programming with C++ by Balaguruswami.Post Laboratory questions1. Give two points of differences between constructor destructor. 2. How one can print "Bye Bye Baby" message when p	and
References for solving the problemThinking in C++ by Bruce eckel - Volume 1, Mastering C++ Venugopal, Object Oriented Programming with C++ by Balaguruswami.Post Laboratory questions1. Give two points of differences between constructor destructor.2. How one can print "Bye Bye Baby" message when p execution gets terminate?	and
References for solving the problemThinking in C++ by Bruce eckel – Volume 1, Mastering C++ Venugopal, Object Oriented Programming with C++ by Balaguruswami.Post Laboratory questions1. Give two points of differences between constructor destructor.2. How one can print "Bye Bye Baby" message when p execution gets terminate?3. What changes should be made in the logic so data sl	and
References for solving the problem Post Laboratory questions 1. Give two points of differences between constructor destructor. 2. How one can print "Bye Bye Baby" message when pexecution gets terminate? 3. What changes should be made in the logic so data she accessible outside the class?	and program hould not
References for solving the problem Post Laboratory questions 1. Give two points of differences between constructor destructor. 2. How one can print "Bye Bye Baby" message when pexecution gets terminate? 3. What changes should be made in the logic so data she accessible outside the class? 4. Which error shall be raised if we don't provide any	and program hould not access
References for solving the problem Post Laboratory questions 1. Give two points of differences between constructor destructor. 2. How one can print "Bye Bye Baby" message when pexecution gets terminate? 3. What changes should be made in the logic so data she accessible outside the class? 4. Which error shall be raised if we don't provide any modifier to any data member and we try to call that	and program hould not access
References for solving the problem Post Laboratory questions 1. Give two points of differences between constructor destructor. 2. How one can print "Bye Bye Baby" message when pexecution gets terminate? 3. What changes should be made in the logic so data sleep be accessible outside the class? 4. Which error shall be raised if we don't provide any modifier to any data member and we try to call that from main function using object?	and program hould not access
References for solving the problem Post Laboratory questions 1. Give two points of differences between constructor destructor. 2. How one can print "Bye Bye Baby" message when pexecution gets terminate? 3. What changes should be made in the logic so data slibe accessible outside the class? 4. Which error shall be raised if we don't provide any modifier to any data member and we try to call that from main function using object? Assessment	and program hould not access
Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ Venugopal, Object Oriented Programming with C++ by Balaguruswami. Post Laboratory questions	and program hould not access
Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ Venugopal, Object Oriented Programming with C++ by Balaguruswami. Post Laboratory questions	and program hould not access
Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ Venugopal, Object Oriented Programming with C++ by Balaguruswami. Post Laboratory questions	and program hould not access
Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ Venugopal, Object Oriented Programming with C++ by Balaguruswami. Post Laboratory questions	and program hould not access
Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ Venugopal, Object Oriented Programming with C++ by Balaguruswami. Post Laboratory questions	and program hould not access

Practical No. 7	Enrollment No <u>.</u>	Group : E
Practical Problem	Create a class CounteID that contains an float id. There should be	
	default constructor in class CounteID. It should print its id and	
	message like "It is being created", when an object is being created	
	using new operator. It should also p	orint its id and message like "It is
	being destroyed", when object is be	ing destroyed using delete
	operator.	
Objective(s)	Clear the concept of new and delete	operators.
Pre-requisite	Usage of cout, cin, different looping	constructs and conditional
	statements along with class & objec	t.
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	P06: Ability to use the techniques, s	
606) . 1 . 1 . 1	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	inology of object oriented
	programming. 2. To understand memory mana	gement using constructors and
	destructors.	gement using constructors and
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between new and constructor.	
questions	2. How one can free the resourc	es which have been allocated
	during the program execution?	
	3. What changes should be made in the logic so we can allocate	
	memory without using new operator? 4. Which will happen if we don't free the resources that have	
	been allocated during the program execution? Assessment	
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 8	Enrollment No. Group : E		
Practical Problem	Define a class called Employee with the name and date of		
	appointment. Create 5 employee objects as an array, sort and print		
	them as per their date of an appointment. That is, print them as per		
	their seniority.		
Objective(s)	Clear the concept of member function	ons and how to handle functions	
	with object.		
Pre-requisite	Usage of class, object and member f	unction.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as	
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic term	inology of object oriented	
	programming.	and and uning constructors and	
	To understand memory management using constructors and destructors.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
the problem	Balaguruswami.		
Post Laboratory	Give two points of differences between constructor and		
questions	member method.	between constructor and	
questions	2. How one can set the initial va	lue of all data members of	
	class?		
	3. What changes should be made in the logic so that initial		
	values will get printed at the time of object creation?		
	4. Which error shall be raised if we don't provide constructor		
	name same as class name?		
Assessment			
	Solution achieves the desired	Viva	
Out of Marks	objective(s) 10	5	
Secured by the	10	3	
student			
Signature			
Date			

Practical No. 9	Enrollment No.	Group : E
Practical Problem	Modify the class Employee defined i	
	two attribute called basic_salary and net_pay & method named	
	calculateBonus().	
	From the date of appointment find the total experience of an	
	employee and calculate bonus according to an experience. The	
	criteria to calculate bonus on basic s	salary is as follow.
	a. if experience is 1 yea	
	b. if experience is 2 year	
	c. if experience is 3 year	
	d. if experience is more	e than 3 years = 40% bonus.
Objective(s)	Clear the concept of member function	ons and how to handle functions
	with object.	
Pre-requisite	Usage of class, object and member f	unction.
Duration for	2 Hours	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, s	
	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic terminology of object oriented	
	programming.To understand memory management using constructors and	
		gement using constructors and
Solution must contain	destructors. Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between object and	
questions	constructor.	
	2. How one can access the priva	
	3. What changes should be made in the logic so that initial	
	values of one object will get as	
	4. Which error shall be raised if we don't provide destructor name same as class name?	
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 10	Enrollment No <u>.</u>	Group : E	
Practical Problem	Create two classes Inches and Centimeter which store the value of		
	height. Inches stores height in inch and Centimeter in centimeter.		
	Write a program that can read values for the class objects and add		
	one object of Inches with another object of Centimeter. Use a friend		
	function to carry out the addition or		
	the results may be a Inches object or		
	on the units in which the result are i		
	The display should be in the format	of Inches or Centimeter	
	depending on the object on display.		
Objective(s)	Clear the concept of friend function		
Pre-requisite	Usage of class, object and member for	ınction.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	P06: Ability to use the techniques, s		
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic termi	nology of object oriented	
	programming.		
	2. To understand memory management using constructors and		
Caladia a santaia	destructors.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between virtual function and		
questions	friend function?		
_	2. How one can one set the default value to the function		
		ult value to the function	
	parameter?		
	parameter? 3. What changes should be made	in the logic so that we can	
	parameter? 3. What changes should be made carry out subtraction operation	in the logic so that we can n?	
	parameter? 3. What changes should be made carry out subtraction operation. 4. Which error shall be raised if the control of	in the logic so that we can n? we don't provide forward	
	parameter? 3. What changes should be made carry out subtraction operation. 4. Which error shall be raised if declaration of class when we a	in the logic so that we can n? we don't provide forward	
	parameter? 3. What changes should be made carry out subtraction operation. 4. Which error shall be raised if declaration of class when we as Friend function?	in the logic so that we can n? we don't provide forward	
	parameter? 3. What changes should be made carry out subtraction operation. 4. Which error shall be raised if declaration of class when we a Friend function? Assessment	in the logic so that we can n? we don't provide forward are implementing concept of	
	parameter? 3. What changes should be made carry out subtraction operation. 4. Which error shall be raised if declaration of class when we a Friend function? Assessment Solution achieves the desired	in the logic so that we can n? we don't provide forward	
Out of Marks	parameter? 3. What changes should be made carry out subtraction operation. 4. Which error shall be raised if declaration of class when we a Friend function? Assessment Solution achieves the desired objective(s)	in the logic so that we can n? we don't provide forward are implementing concept of Viva	
Out of Marks Secured by the	parameter? 3. What changes should be made carry out subtraction operation. 4. Which error shall be raised if declaration of class when we a Friend function? Assessment Solution achieves the desired	in the logic so that we can n? we don't provide forward are implementing concept of	
Secured by the	parameter? 3. What changes should be made carry out subtraction operation. 4. Which error shall be raised if declaration of class when we a Friend function? Assessment Solution achieves the desired objective(s)	in the logic so that we can n? we don't provide forward are implementing concept of Viva	
	parameter? 3. What changes should be made carry out subtraction operation. 4. Which error shall be raised if declaration of class when we a Friend function? Assessment Solution achieves the desired objective(s)	in the logic so that we can n? we don't provide forward are implementing concept of Viva	

Practical No. 11	Enrollment No.	Group : E	
Practical Problem	Overload + and – for a queue clas	Overload + and – for a queue class such that + provides insert and	
	– provides delete operation.		
Ohi a ativo (a)	Clear the consent of an austral and	l 4:	
Objective(s)	Clear the concept of operator over		
Pre-requisite	Usage of class, object and member	er function.	
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practic	al skill of tools and technologies	
	to solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the technique		
(0())	necessary for software developm		
CO(s) to be achieved		rminology of object oriented	
	programming.	nagement using constructors	
	2. To understand memory ma	magement using constructors	
	3. To understand the con	ncept of polymorphism and	
		oile time) polymorphism in	
	programs by overloading o		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem		Venugopal, Object Oriented Programming with C++ by	
•	Balaguruswami.		
Post Laboratory	1. Give two points of differences between function		
questions		overloading and operator function?	
1	2. How one can overload (: :)	operator?	
		3. What changes should be made in the logic so that we can	
	print the queue object by overloading cout< </th		
		4. Which error shall be raised if we don't overload operator	
	function to insert the value in queue?		
	Assessment		
	Solution achieves the desired	Viva	
0 . (3/ 3	objective(s)	_	
Out of Marks	10	5	
Secured by the student			
Signature			
Date			

Practical No. 12	Enrollment No <u>.</u>	Group : E	
Practical Problem	Write a program to create a class called Double. Display the addition		
	and division of two Double objects.		
Objective(s)	Clear the concept of operator overlo	ading.	
Pre-requisite	Usage of class, object and member f	unction.	
Duration for	1 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to	
PO(s) to be achieved	P06: Ability to use the techniques, s necessary for software developmen		
CO(s) to be achieved	1. To understand the basic termi		
	programming.	,	
	2. To understand memory mana	gement using constructors and	
	destructors.		
	3. To understand the concept of		
	static (compile time) poly	ymorphism in programs by	
Colution must sontain	overloading operators.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between operator function and		
questions	cast operator function?		
	2. How one can overload (->) operator?		
	3. What changes should be made in the logic so that we can		
	increment Double objects by 1.5 value?		
	4. Which error shall be raised if we don't provide return type in operator function?		
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)	7.774	
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

	Envelopment No.	
Practical No. 13 Practical Problem	=	roup: E
Practical Problem	Create two class one is Friend and another is Buddy, Friend class has data member like name and email-id, and Buddy class inherit	
	the properties of Friend class and it has data member like dob,	
	mobile no and address and do the following operation.	
	a. Create three constructors for base a	
	b. Insert data through derived class pa	rameterized
	constructor.	
	Display all the information through parent of	class reference variable.
Objective(s)	Clear the concept of Inheritance.	
Pre-requisite	Usage of class, object and member function,	function overriding,
	access modifiers.	
Duration for completion	2 Hours	
PEO(s) to be achieved	PEO2: To provide quality practical skill of to	ools and technologies to
	solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, skills and	l modern tools as
(0(), 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	necessary for software development.	C 11
CO(s) to be achieved	1. To understand the basic terminology	of object oriented
	programming.	using constructors
	2. To understand memory management and destructors.	using constructors
	3. To understand the concept of	polymorphism and
	implement static (compile time) polymorphism in programs	
	by overloading operators.	
	4. To understand and implement the concept of inheritance	
	and overriding functions.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Mastering C++ by Venugopal, Object Oriented Programming with	
the problem	C++ by Balaguruswami.	
Post Laboratory	1. Give two points of differences between	n hybrid inheritance
questions	and hierarchical inheritance?	
	2. How one can inherit friend class by private accessibility?	
	3. What changes should be made in the logic so that buddy	
	class cannot use attributes and methods of friend class?	
	4. Which error shall be raised if we don't provide access modifiers for inheritance?	
	Assessment	
	achieves the desired objective(s)	Viva
Out of Marks	10	5
Secured by the student	10	J
secured by the student		
Signature	•	i
Signature Date		

Practical No. 14	Enrollment No	Group : E
	Enrollment No.	
Practical Problem	Create a base class called shape. Use this class to store two double type values that could be use to compute the area of figures. Derive	
	two specific classes called triang	-
	shape. Add get_data() member	
	compute and display the area of virtual function and redefine this	
		function in the derived classes to
	suit their requirements. Using these classes design a prog	rram that will account dimensions
	of the triangle or a rectangle inter	-
Objective(s)	Clear the concept of Virtual Function	
	*	
Pre-requisite	Usage of class, object and member	function, function overriding,
	access modifiers and inheritance.	
Duration for completion	1 Hours	
PEO(s) to be achieved	PEO2: To provide quality practica	l skill of tools and technologies to
	solve industry problems.	<u> </u>
PO(s) to be achieved	PO6: Ability to use the techniques	, skills and modern tools as
	necessary for software developme	
CO(s) to be achieved	1. To understand the basic term	minology of object oriented
	programming.	
		nagement using constructors
	and destructors.	
		cept of polymorphism and
		me) polymorphism in programs
	by overloading operators.	
	4. To understand and implement the concept of inheritance	
	and overriding functions.5. To understand concept of dynamic polymorphism using	
0.1	virtual functions, overriding functions and abstract class.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel - Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Progr	amming with C++ by
	Balaguruswami.	
Post Laboratory	1. Give two points of difference	es between virtual function and
questions	pure virtual function?	
4	2. How one can access the cur	rent copy of base class by
	calling function using derive	
	3. What changes should be ma	de in the logic so that
	display_area() method can c	
	4. Which error shall be raised if we don't provide virtual	
	keyword to create pure virt	ual function?
	Assessment	
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Marks Secured		
Signature		
Date		
<u> </u>		

Practical No. 15	Enrollment No. (Group : E
Practical Problem	Write a program which reads a text from k	
Tractical Froblem	the following information on the screen in	
	Number of consonants, Number of vovels, Number of characters,	
	String should be left – justified and the numbers should be right –	
	justified in a suitable field width, and also fill unused space with	
	star (*)	1
Objective(s)	Learn how to format output using i/o funct	ions.
Pre-requisite	Usage of class, object and member function	, function overriding,
	access modifiers, inheritance and formatting	ng function .
Duration for completion	1 Hours	
PEO(s) to be achieved	PEO2: To provide quality practical skill of t	ools and technologies to
	solve industry problems.	O
PO(s) to be achieved	P06: Ability to use the techniques, skills an	d modern tools as
	necessary for software development.	
CO(s) to be achieved	1. To understand the basic terminology	of object oriented
	programming.	
	2. To understand memory management	t using constructors
	and destructors.	f notronounhiom and
	3. To understand the concept of implement static (compile time) poly	
	by overloading operators.	morphism in programs
	4. To understand and implement the concept of inheritance	
	and overriding functions.	
	5. To understand concept of dynamic polymorphism using	
	virtual functions, overriding function	
	6. To understand I/O operations and hierarchy of File Stream	
	classes and able to develop programs to perform File and	
	I/O operations.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Mastering C++ by Venugopal, Object Orient	ed Programming with
the problem	C++ by Balaguruswami.	
Post Laboratory	1. Give two points of differences betwe	en get() and put()
questions	function of istream and ostream.	
	2. How do the I/O facilities in C++ differ from that in C?	
	3. What changes should be made in the logic so that we can	
	calculate how many words are there in input?	
	4. Which error shall be raised if we don't provide iomanip	
	header file in this program?	
	Assessment	¥72-
Out of Manles	Solution achieves the desired bjective(s)	Viva
Out of Marks	10	5
Marks Secured		
Signature		
Date		

Practical No. 16	Enrollment No.	Group : E	
Practical Problem	Write a program that reads the character from the file and		
	calculates the average number of charac		
	Display the average number of character or	n screen.	
Objective(s)	Clear the concepts of handling file in C++		
Pre-requisite	Usage of class, object and member function	, function overriding,	
	access modifiers, inheritance and formatting	access modifiers, inheritance and formatting function and header	
	files, file classes for I/O in file.		
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical skill of t	ools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, skills an	d modern tools as	
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology	of object oriented	
	programming.		
	2. To understand memory management	t using constructors	
	and destructors. 3. To understand the concept of	f notronounhion and	
	3. To understand the concept of implement static (compile time) poly		
	by overloading operators.	morphism in programs	
	4. To understand and implement the	concept of inheritance	
	and overriding functions.		
	5. To understand concept of dynamic polymorphism using		
	virtual functions, overriding functions and abstract class.		
	6. To understand I/O operations and h	-	
	classes and able to develop programs to perform File and		
	I/O operations.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving		Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming	with C++ by	
	Balaguruswami.		
Post Laboratory	1. Give two points of differences betwe	en ostraem and	
questions	ofstream?		
		2. How one can create a new file using program?	
	3. What changes should be made in the logic so that if file		
	already exists, it should delete all content of that file at the time of file creation?		
	4. Which header file we need to include	for file handling?	
	Assessment	ioi inc nananng:	
	Solution achieves the desired bjective(s)	Viva	
Out of Marks	10	5	
Marks Secured	Ψ.		
Signature			
Date			

5 years Integrated M.Sc (IT): 2nd Semester Practical Problem and Assessment Policy

060010203: Object Oriented Programming

Practical No. 1	Enrollment No. Group : F		Group : F	
Practical Problem	WAP to input two numbers and find their LCM and HCF.			
Objective(s)	Want to make students familiar with C++ environment and with cin			
	and cout statements.			
Pre-requisite	Usage of cout and cin objects.			
Duration for	1 Hour			
completion				
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and	technologies to	
PO(s) to be achieved	solve industry problems. PO6: Ability to use the techniques, s	Irilla and madar	n toola aa	
Po(s) to be achieved	necessary for software developmen		ii toois as	
CO(s) to be achieved	1. To understand the basic term		ct oriented	
	programming.			
Solution must contain	Program and Output			
Nature of submission	Handwritten			
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by			
the problem	Venugopal, Object Oriented Programming with C++ by			
	Balaguruswami.			
Post Laboratory	1. Give two points of differences between cout and printf			
questions	statements.			
	2. How one can take input from user in C++?			
	3. What changes should be made in the logic so that the same			
	program generates LCM and HCF in a single function? 4. Which error shall be raised if we use printf statements			
	4. Which error shall be raised if we use printf statements instead of cin?			
	Assessment			
	Solution achieves the desired	V	iva	
	objective(s)			
Out of Marks	10		5	
Secured by the				
student				
Signature				
Date				

Practical No. 2	Enrollment No <u>.</u>	Group : F	
Practical Problem	Write a program to generate a series of Armstrong numbers. A		
	number is an Armstrong number if the sum of the cube of its digit is		
	equal to the number.		
Objective(s)	Want to make students familiar with	h C++ environment and with cin	
	and cout statements.		
Pre-requisite	Usage of cout and cin objects.		
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to	
PO(s) to be achieved	PO6: Ability to use the techniques, s	kills and modern tools as	
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic term	inology of object oriented	
	programming.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel - Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between cin and scanf		
questions	statements.		
	2. How one can take input from user in C++?		
	3. What changes should be made in the logic so that the same		
	program takes the input of number for user and checks		
	whether the given number is palindrome or not? 4. Which error shall be raised if we use scanf statements instead		
	of cin?		
Assessment			
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 3	Enrollment No <u>.</u>		Group : F
Practical Problem	WAP to input elements in two matr	ices and then fir	nd the sum of
	these matrices.		
Objective(s)	Clear the concept of conditional stat	ements and loop	OS.
Pre-requisite	Usage of cout,cin, different looping of	onstructs and co	onditional
	statements.		
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and	technologies to
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s		n tools as
606) .] .] .	necessary for software developmen		1
CO(s) to be achieved	1. To understand the basic terming programming.	nology of objec	t oriented
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Vo	lume 1 Masterii	ng C++ hv
the problem	Venugopal, Object Oriented Programming with C++ by		
the problem	Balaguruswami.		
Post Laboratory	1. Apart from If condition statements, which statements can we		
questions	use to solve this problem?		
questions	2. How one can take compare two integers in C++?		
	3. What changes should be made in the logic so that the same		
	program generates the multiplication of diagonal of two		
	matrix?		
	4. Which error shall be raised if we write condition as follow? if(int x=10 && int y=20)		
	Assessment		
	Solution achieves the desired Viva		iva
	objective(s)		
Out of Marks	10		5
Secured by the			
student			
Signature			
Date			

Practical No. 4	Enrollment No <u>.</u>	Group : F	
Practical Problem	Write a program to generate n lines	of the following pattern on the	
	computer screen:		
	4321		
	432		
	43		
	4		
Objective(s)	Clear the concept of conditional stat	ements and loops.	
Pre-requisite	Usage of cout, cin, different looping	constructs and conditional	
	statements.		
Duration for	1 Hour		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s		
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic term:	inology of object oriented	
Calutian must santain	programming.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Vo	9 -	
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	 Give two points of differences between for and dowhile() 		
questions	loop constructs.		
	How one can develop the same program without using for construct?		
	3. What changes should be made in the logic so that the same		
	program prints the same pattern but in descending order as		
	follow?		
	4		
	43		
	432		
	4321		
		provide only three ; in for loop?	
	Assessment		
	Solution achieves the desired objective(s)	Viva	
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 5	Enrollment No <u>.</u>	Group : F	
Practical Problem	Write a program that define class st		
	student id,name,class name and marks of minimum 5 subjects, and		
	do the following:		
	 Insert values for five students through constructor. Calculate percentage and grade, if student is fail in any 		
		if he/she is pass then criteria for	
	grade is as follows:	if the/site is pass their criteria for	
	a. if per >= 70 grade is	A	
	b. if per >=60 and <70	then grade is B	
	c. if per >=50 and <60	then grade is C	
	d. otherwise D.		
	Display student information accord	ing to grade wise, whenever you	
	display student information	ing to grade wise, whenever you	
Objective(s)	Clear the concept of Class and Object	ets.	
Pre-requisite	Usage of cout,cin, different looping	constructs and conditional	
	statements along with struct, class a	and object.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	skill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, skills and modern tools as		
CO(s) to be achieved	necessary for software development.		
co(s) to be achieved	 To understand the basic terminology of object oriented programming. 		
	2. To understand memory mana	agement using constructors and	
	destructors.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences	between structure and class	
questions	2. How one can execute the sam	e program without creating	
	object?	to the least on that are an	
	3. What changes should be made	e in the logic so that program are fail, when program will get	
	terminate?	ine ian, when program win get	
	4. Which error shall be raised if	we don't provide semicolon (;)	
	at the end of class?		
	Assessment		
	Solution achieves the desired	Viva	
0-4-685	objective(s)	_	
Out of Marks	10	5	
Secured by the student Signature			
Date			

Practical No. 6	Enrollment No <u>.</u>	Group : F
Practical Problem	Write a program that defines a cla	
	calculate different areas of shapes like triangle, circle, square,	
	rectangle etc; using the concept of method overloading. Create the	
	object of calculation_area and using the concept of menu driven call	
	different method of calculation_area	a e e e e e e e e e e e e e e e e e e e
Objective(s)	Clear the concept of Class and Object	rts.
Pre-requisite	Usage of cout,cin, different looping of	constructs and conditional
	statements along with struct, class a	and object.
Duration for	2 Hours	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.	kill of tools and technologies to
PO(s) to be achieved	P06: Ability to use the techniques, s	kills and modern tools as
	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	inology of object oriented
	programming.	
		gement using constructors and
	destructors.	
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel - Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.	
Post Laboratory	1. Give two points of differences between constructor and	
questions	destructor.	
•	2. How one can print area of shape that has been selected by	
	user when program execution gets terminate?	
	3. What changes should be made in the logic so data should not	
	be accessible outside the class?	
	4. Which error shall be raised if we don't provide any access	
	modifier to any data member and we try to call that member	
	from main function using object?	
	Assessment	¥75
	Solution achieves the desired objective(s)	Viva
Out of Marks	10	5
Secured by the	10	3
student		
Signature		
Date		
		1

Practical No. 7	Enrollment No <u>.</u>	Group : F
Practical Problem	Create a class Counter that contains	s an int count variable. There
	should be default constructor in class Counter which will ask user to	
	give the initial value for count variable. It should print its count value	
	which is provided by user and mess	age like "It is being created",
	when an object is being created using	ng new operator. It should also
	print its count value and message li	ke "It is being destroyed", when
	object is being destroyed using dele	e te operator.
Objective(s)	Clear the concept of new and delete	operators.
Pre-requisite	Usage of cout, cin, different looping	constructs and conditional
_	statements along with class & objec	t.
Duration for	1 Hour	
completion		
PEO(s) to be achieved	PEO2: To provide quality practical s	skill of tools and technologies to
	solve industry problems.	
PO(s) to be achieved	PO6: Ability to use the techniques, s	
(0())	necessary for software developmen	
CO(s) to be achieved	1. To understand the basic term	inology of object oriented
	programming. 2. To understand memory mana	gement using constructors and
	destructors.	gement using constructors and
Solution must contain	Program and Output	
Nature of submission	Handwritten	
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by	
the problem	Venugopal, Object Oriented Programming with C++ by	
•	Balaguruswami.	
Post Laboratory		between new and constructor.
questions	2. How one can free the resourc	
•	during the program execution	
	3. What changes should be made	
	memory without using new o	
	4. Which will happen if we don't been allocated during the pro	
	Assessment	gram execution:
	Solution achieves the desired	Viva
	objective(s)	
Out of Marks	10	5
Secured by the		
student		
Signature		
Date		

Practical No. 8	Enrollment No <u>.</u>	Group : F	
Practical Problem	Write a program to create Student c	class with the following	
	attributes.		
	Register Number, Name of the student, Mark in Subject 1, Mark in		
	subject 2, Mark in subject 3, Total Marks		
	The total of the three marks mu	st be calculated only when the	
	student passes in all three subject	cts. The passing marks for each	
	subject is 50. If a candidate fails in	any one of the subjects, his total	
	marks must be declared as 0.		
	constructor for this class. Write a m	_	
	the details of the student object. In	main method create an array of	
	three Student objects and display th	ie object details.	
Objective(s)	Clear the concept of member function	-	
, ()	with object.		
Pre-requisite	Usage of class, object and member for	unction.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s		
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic terminology of object oriented		
	programming.To understand memory management using constructors and		
	destructors.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
F	Balaguruswami.		
Post Laboratory	1. Give two points of differences	between constructor and	
questions	member method.		
44.000.00	2. How one can set the initial value of all data members of		
	class?		
	3. What changes should be made		
	values will get printed at the t		
	4. Which error shall be raised if name same as class name?	we don't provide constructor	
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 9	Enrollment No <u>.</u>		Group : F
Practical Problem	Considered the Student class defined in the previous program(11), write a method bestStudent() which returns the student with the highest total marks and print the detail of that student.		
Objective(s)	Clear the concept of member function with object.		ndle functions
Pre-requisite	Usage of class, object and member f	unction.	
Duration for completion	2 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical s solve industry problems.		
PO(s) to be achieved	P06: Ability to use the techniques, s necessary for software developmen	t.	
CO(s) to be achieved	 To understand the basic terminology of object oriented programming. To understand memory management using constructors and destructors. 		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel - Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by Balaguruswami.		
Post Laboratory questions	 Give two points of differences between object and constructor. How one can access the private data of class? What changes should be made in the logic so that initial values of one object will get assign to another object? Which error shall be raised if we don't provide destructor name same as class name? 		
	Assessment		1-
	Solution achieves the desired objective(s)	Viv	a
Out of Marks	10	5	
Secured by the student			
Signature			
Date			

Practical No. 10	Enrollment No <u>.</u>	Group : F	
Practical Problem	Create two classes Feet and Centime	eter which store the value of	
	height. Feet stores height in feet and Centimeter in centimeter. Write		
	a program that can read values for the class objects and add one		
	object of Feet with another object of		
	function to carry out the addition or	•	
	the results may be a Feet object or C		
	the units in which the result is requi		
	The display should be in the format	of Feet or Centimeter depending	
	on the object on display.		
Objective(s)	Clear the concept of friend function		
Pre-requisite	Usage of class, object and member for	unction.	
Duration for	2 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s		
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic termi	inology of object oriented	
	programming.		
		2. To understand memory management using constructors and	
Solution must contain	destructors. Program and Output		
Nature of submission			
	Handwritten Thinking in Cooking Processed - Volume 1 Magtaring Cooking		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between virtual function and		
questions	friend function?	It also the Country	
	2. How one can one set the defar parameter?	uit value to the function	
	3. What changes should be made	in the logic so that we can	
	carry out multiplication opera		
	4. Which error shall be raised if		
	declaration of class when we a		
	Friend function?		
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 11	Enrollment No.	Group : F	
Practical Problem		redList class such that + provides	
	insert node and – provides delete node operation.		
		1 1.	
Objective(s)	Clear the concept of operator over		
Pre-requisite	Usage of class, object and member	er function.	
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practic	al skill of tools and technologies	
	to solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the technique		
	necessary for software developm		
CO(s) to be achieved		rminology of object oriented	
	programming. 2. To understand memory ma	nagement using constructors	
	and destructors.	magement using constructors	
	3. To understand the con	ncept of polymorphism and	
		pile time) polymorphism in	
	programs by overloading o		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Programming with C++ by		
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between function		
questions	overloading and operator f		
	2. How one can overload (::)		
		ade in the logic so that we can	
		bject by overloading cout<-?	
		4. Which error shall be raised if we don't overload operator	
	function to insert the value in SinglyLinkedList? Assessment		
	Solution achieves the desired	Viva	
	objective(s)		
Out of Marks	10	5	
Secured by the			
student			
Signature			
Date			

Practical No. 12	Enrollment No.	Group : F	
Practical Problem	Write a program to create a class called Integer. Display the addition		
	and division of two Integer objects.		
Objective(s)	Clear the concept of operator overlo	oading.	
Pre-requisite	Usage of class, object and member for	unction.	
Duration for	1 Hours		
completion			
PEO(s) to be achieved	PEO2: To provide quality practical s	kill of tools and technologies to	
	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques, s		
	necessary for software developmen		
CO(s) to be achieved	1. To understand the basic termi	nology of object oriented	
	programming.	_	
		gement using constructors and	
	destructors.	6 1 1: 1: 1 .	
		f polymorphism and implement	
	static (compile time) poly	ymorphism in programs by	
Solution must contain	overloading operators. Program and Output		
	· · · · · · · · · · · · · · · · · · ·		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Vo		
the problem		Venugopal, Object Oriented Programming with C++ by	
	Balaguruswami.		
Post Laboratory	1. Give two points of differences between operator function and		
questions	cast operator function?		
	2. How one can overload (->) op		
	3. What changes should be made		
	increment Integer objects by 3		
	4. Which error shall be raised if we don't provide return type in		
	operator function?		
	Assessment	¥72_	
	Solution achieves the desired objective(s)	Viva	
Out of Marks	10	5	
Secured by the	10	3	
student			
Signature			
Date			

5 years Integrated M.Sc (IT): 2nd Semester Practical Problem and Assessment Policy

060010203: Object Oriented Programming

Practical No. 13	010203: Object Oriented Programming Enrollment No. G	roup : F	
Practical Problem	Create three class Publisher , Book and Sto	•	
1 ractical i robiem	data member like publisher name and sub		
	Book class inherit the properties of Publish		
	member like book name, rate and Stock class inherit the		
	properties of Book class and it has data member like total quantity		
	and total rate and do the following operation		
	Create three constructors for base and deriv		
	Create array of object for Stock.		
	Insert data through derived class parameter	ized constructor.	
	Illustrate the use of this reference and Super	· keyword.	
	Display all the information according to		
	proper format through parent class reference	e variable.	
Objective(s)	Clear the concept of Inheritance.		
Pre-requisite	Usage of class, object and member function,	function overriding,	
	access modifiers.		
Duration for completion	2 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical skill of to	ols and technologies to	
	solve industry problems.		
PO(s) to be achieved	P06: Ability to use the techniques, skills and	modern tools as	
	necessary for software development.		
CO(s) to be achieved	1. To understand the basic terminology	of object oriented	
	programming.		
		2. To understand memory management using constructors	
	and destructors.		
	3. To understand the concept of polymorphism and		
	implement static (compile time) polyr	norphism in programs	
	by overloading operators.		
	4. To understand and implement the concept of inheritance and overriding functions.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
	1 1 111	d Due augustine strick	
References for solving	Mastering C++ by Venugopal, Object Oriente	a Programming with	
the problem	C++ by Balaguruswami.	1 1 1 1 1 1	
Post Laboratory	1. Give two points of differences between	n hybrid inheritance	
questions	and hierarchical inheritance?How one can inherit friend class by p	rivato accossibility?	
	3. What changes should be made in the l		
	class cannot use attributes and metho	O	
	4. Which error shall be raised if we don't		
	modifiers for inheritance?	provide decess	
	Assessment		
	achieves the desired objective(s)	Viva	
Out of Marks	10	5	
Secured by the student		-	
Signature			
Date			
Date			
Date			

	7010203. Object Offenteu i 10g		
Practical No. 14	Enrollment No <u>.</u>	Group : F	
Practical Problem	Create a base class called shape. Use this class to store two double		
	type values that could be use to compute the area of figures. Derive		
	two specific classes called triangle and rectangle from the base		
	shape. Add get_data() member function to the base class to		
	compute and display the area of figure. Make display_area() as a		
	virtual function and redefine this function in the derived classes to		
	suit their requirements.		
	Using these classes design a program that will accept dimensions		
	of the triangle or a rectangle inter	activly and display the area.	
Objective(s)	Clear the concept of Virtual Functi		
Pre-requisite	Usage of class, object and member	function, function overriding,	
•	access modifiers and inheritance.	, 3,	
Duration for completion	1 Hours		
		1-1:11-64114111	
PEO(s) to be achieved	PEO2: To provide quality practica	i skill of tools and technologies to	
DO(a) to 11-1	solve industry problems.		
PO(s) to be achieved	PO6: Ability to use the techniques		
CO(-) to be a discord	necessary for software developme		
CO(s) to be achieved	1. To understand the basic term	minology of object oriented	
	programming.		
	2. To understand memory mar	lagement using constructors	
	and destructors.		
		cept of polymorphism and	
		me) polymorphism in programs	
		by overloading operators.	
	4. To understand and implement the concept of inheritance		
	and overriding functions.	•	
		5. To understand concept of dynamic polymorphism using	
0.1	virtual functions, overriding functions and abstract class.		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1, Mastering C++ by		
the problem	Venugopal, Object Oriented Progr	amming with C++ by	
	Balaguruswami.		
Post Laboratory		es between virtual function and	
questions	pure virtual function?		
questions	2. How one can access the cur	rent copy of base class by	
	calling function using derive		
	3. What changes should be ma	•	
	display_area() method can c		
	4. Which error shall be raised		
	keyword to create pure virti	•	
	Assessment		
	Solution achieves the desired	Viva	
	objective(s)	****	
Out of Marks	10	5	
Marks Secured	10	<u> </u>	
Signature			
Date			
Date			

5 years Integrated M.Sc (IT): 2nd Semester Practical Problem and Assessment Policy

060010203: Object Oriented Programming

Practical No. 15	Enrollment No <u>.</u> Control Programming	Group : F		
Practical Problem		•		
Practical Problem		Write a program which reads a text from keyboard and displays the following information on the screen in two columns:		
	Number of capital letters.			
	Number of Vowels.			
	Number of Consonant.			
	String should be right – justified and the numbers should be left –			
	justified in a suitable field width			
Objective(s)	Learn how to format output using i/o functions.			
Pre-requisite	Usage of class, object and member function, function overriding,			
	access modifiers, inheritance and formatting function .			
Duration for completion	1 Hours			
PEO(s) to be achieved	PEO2: To provide quality practical skill of tools and technologies to			
	solve industry problems.			
PO(s) to be achieved	PO6: Ability to use the techniques, skills and modern tools as			
	necessary for software development.			
CO(s) to be achieved	1. To understand the basic terminology of object oriented			
	programming.			
	2. To understand memory management using constructors			
	and destructors.			
	3. To understand the concept of polymorphism and implement static (compile time) polymorphism in programs			
	by overloading operators.	illoi pilisili ili pi ograilis		
		concept of inharitance		
	4. To understand and implement the concept of inheritance and overriding functions.			
	5. To understand concept of dynamic polymorphism using			
	virtual functions, overriding functions and abstract class.			
	6. To understand I/O operations and hierarchy of File Stream			
	classes and able to develop programs to perform File and			
	I/O operations.	r		
Solution must contain	Program and Output			
Nature of submission	Handwritten			
References for solving	Mastering C++ by Venugopal, Object Oriented Programming with			
the problem	C++ by Balaguruswami.			
Post Laboratory	1. Give two points of differences between get() and put()			
questions	function of istream and ostream.			
	2. How do the I/O facilities in C++ diffe			
	3. What changes should be made in the	<u> </u>		
		calculate how many words are there in input?		
	4. Which error shall be raised if we don	't provide iomanip		
	header file in this program?			
	Assessment			
	Solution achieves the desired bjective(s)	Viva		
Out of Marks	10	5		
77 7 0				
Marks Secured				
Marks Secured Signature Date				

5 years Integrated M.Sc (IT): 2nd Semester Practical Problem and Assessment Policy

060010203: Object Oriented Programming

Practical No. 16	Enrollment No.	Group : F	
Practical Problem		•	
r ractical i robiem	Write a text analyzer program that will read any text file. The program is to print a menu that gives the user the option of counting lines, words, characters, sentences (one or more words ending in a period), or all of the above from the given file. Provide a separate function for each option. At the end of the analysis,		
	generate appropriate report and write it is	ı report.txt file.	
Objective(s)	Clear the concepts of handling file in C++		
Pre-requisite	Usage of class, object and member function	n, function overriding,	
	access modifiers, inheritance and formatting function and header		
	files, file classes for I/O in file.	files, file classes for I/O in file.	
Duration for completion	1 Hours		
PEO(s) to be achieved	PEO2: To provide quality practical skill of tools and technologies to solve industry problems.		
PO(s) to be achieved	P06: Ability to use the techniques, skills and modern tools as necessary for software development.		
CO(s) to be achieved	To understand the basic terminology of object oriented programming.		
	2. To understand memory management using constructors and destructors.		
	3. To understand the concept of polymorphism and implement static (compile time) polymorphism in programs by overloading operators.4. To understand and implement the concept of inheritance		
	 and overriding functions. 5. To understand concept of dynamic polymorphism using virtual functions, overriding functions and abstract class. 6. To understand I/O operations and hierarchy of File Stream classes and able to develop programs to perform File and I/O operations. 		
Solution must contain	Program and Output		
Nature of submission	Handwritten		
References for solving	Thinking in C++ by Bruce eckel – Volume 1	Mastering C++ hy	
the problem	Venugopal, Object Oriented Programming with C++ by		
the problem	Balaguruswami.		
Post Laboratory	Give two points of differences between ostraem and		
questions	ofstream?		
questions	2. How one can create a new file using program?		
	3. What changes should be made in the logic so that if file		
	already exists, it should delete all content of that file at the		
	time of file creation?	C C1 1 11 12 0	
	4. Which header file we need to includ	e for file handling?	
Assessment			
Out of Marks	Solution achieves the desired bjective(s)	Viva 5	
Out of Marks Marks Secured	10	3	
Signature			
Date			
Date			