Criterion 2: Teaching Learning & Evaluation

Key Indicator: 2.6 – Student Performance and Learning Outcomes

2.6.2 – Attainment of Programme outcomes and course outcomes are evaluated by the institution.

Response

SCSCOE has used following mechanisms to attain the POs, PSOs and COs as it is committed to it.

Continuous Evaluation during the semester: COs of the particular subjects are identified by the subject teacher and are mapped to the POs.

Every teacher monitors the performance of the student with the help of continuous evaluation sheet and the unit test after end of each unit. Target is already decided for every COs depending on the previous year attainment.

Evaluation at the end of the semester: At the end of the semester mock practical/oral examinations and term end examinations are conducted. Faculty designs unit test and Prelim examination paper that meets the certain COs. Based on the performance of the students COs attainment can be calculated.

At the Graduation Level: By considering parameters like Project work carried out by the student, placement student performance is evaluated. To analyze the level of attainment different types of feedbacks are used like alumni feedback, employer feedback, etc. AMC/IQAC conducts review meetings.

To analyze the level of attainment satisfied with the reference to different parameters different types of feedbacks are useful like infrastructure of the institute, teaching- learning process of the institute, placement and other facilities.

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

S. No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune -412205 (MS), India.

Website: www.rajgad.edu.in, Email Id: scscoe@gmail.com

Department of Computer Engineering

Academic Year (2021-22)

Course   Object Oriented Programming(2019 Course)
Course Code   210243
Semester   SE SEM 3

Sr. No.	Course Objectives:
1.	To learn the object-oriented programming paradigm, focusing on the definition and use of classes along with the fundamentals of object-oriented design.
2.	To learn the syntax and semantics of the C++ programming language.
3.	To understand the concept of data abstraction and encapsulation, how to design C++ classes for code reuse, how to implement copy constructors and class member functions, to overload functions and operators in C++.
4.	To learn how inheritance and virtual functions implement dynamic binding with polymorphism.
5.	To learn how to design and implement generic classes with C++ templates and how to use exception handling in C++ programs.

Course Outcomes: On completion of the course, student will be able to

CO1	Apply constructs- sequence, selection and iteration; classes and objects, inheritance, use of predefined classes from libraries while developing software.
CO2	Design object-oriented solutions for small systems involving multiple objects.
CO3	Use virtual and pure virtual function and complex programming situations.
CO4	Apply object-oriented software principles in problem solving.
CO5	Analyze the strengths of object-oriented programming.
CO6	Develop the application using object oriented programming language (C++).

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Course Outcomes (COs):

After completing this course the student must demonstrate the knowledge and Ability to:

Unit I	CO_1	Apply constructs- sequence, selection and iteration; classes and objects, inheritance, use of predefined classes from libraries while developing software.
Unit II	CO_2	Design object-oriented solutions for small systems involving multiple objects.
Unit III	CO_3	Use virtual and pure virtual function and complex programming situations.
Unit IV	CO_4	Apply object-oriented software principles in problem solving.
Unit V	CO_5	Analyze the strengths of object-oriented programming.
Unit VI	CO_6	Develop the application using object oriented programming language (C++).

Program Outcomes

Learners are expected to know and be able to–

PO1	Engineering knowledge	Apply the knowledge of mathematics, science, Engineering fundamentals, and an Engineering specialization to the solution of complex Engineering problems.
PO2	Problem Analysis	Identify, formulate, review research literature and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and Engineering sciences.
PO3	Design / Development of Solutions	Design solutions for complex Engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal,
PO4	Conduct Investigations of Complex	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern Tool Usage	Create, select, and apply appropriate techniques, resources, and modern Engineering and IT tools including prediction and modeling to complex Engineering activities with an understanding of the limitations.

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PO6	The Engineer and Society	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practices.
PO7	Environment and Sustainability	Understand the impact of the professional Engineering solutions in societal and Environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics	Apply ethical principles and commit to professional ethics and responsibilities and norms of Engineering practice
PO9	Individual and Team Work	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication Skills	Communicate effectively on complex Engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make
PO11	Project Management and Finance	Demonstrate knowledge and understanding of Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary
PO12	Life-long Learning	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
Program Specific Outcomes (PSO)		
A graduate of the Computer Engineering Program will demonstrate-		
PSO1	Professional Skills	The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking for efficient design of computer-based
PSO2	Problem-Solving Skills	The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for business success.
PSO3	Successful Career and Entrepreneursh	The ability to employ modern computer languages, environments, and platforms in creating innovative career paths to be an entrepreneur, and a zest for higher studies.

Mapping of CO's vs PO's

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	--	--	--	--	--	--	--	--
CO2	1	2	1	1	--	--	--	--	--	--	--	1
CO3	2	1	2	2	--	--	--	--	--	--	--	--
CO4	2	1	2	1	--	--	--	--	--	--	--	1
CO5	--	1	--	1	--	--	--	--	--	--	--	--
CO6	--	--	1	--	--	--	--	--	--	--	--	1

Prof. S. B. Shirke
Subject Teacher

Subject : Object OrientedProgramming

COs	Statement of CO	POs satisfied
1	Apply constructs- sequence, selection and iteration; classes and objects, inheritance, use of predefined classes from libraries while developing software.	PO1,PO2,PO3, PO4
2	Design object-oriented solutions for small systems involving multiple objects.	PO1,PO2,PO3, PO4,PO12
3	Use virtual and pure virtual function and complex programming situations.	PO1,PO2,PO3, PO4
4	Apply object-oriented software principles in problem solving.	PO1,PO2,PO3, PO4,PO12
5	Analyze the strengths of object-oriented programming.	PO2,PO4
6	Develop the application using object oriented programming language (C++).	PO3,PO12

	Attainment Range for CO and PO
1	60% upto 69 % student scoring more than target value
2	70% upto 79%student scoring more than target value
3	80% or more student scoring more than target value

Calculation for CO and PO attainment for all students

		ASSIGNMENT NO.: 1 (Three Units I, II & III)						ASSIGNMENT NO.: 2(Three Units IV, V & VI)			
Roll NO.	Question No.	1	2	3	Total Marks	Roll NO.	Question No.	1	2	3	Total Marks
	Sub-questions						Sub-questions				
	Max. Marks	10	10	10			Max. Marks	10	10	10	
	COs satisfied	1	II	III			COs satisfied	IV	V	VI	
SCO20F01	Badadhe Damayanti Dnyandev	10	8	8	26	SCO20F01	Badadhe Damayanti Dnyandev	6	6	7	19
SCO20F02	Bandal Rutuja Dattatray	9	8	8	25	SCO20F02	Bandal Rutuja Dattatray	6	8	7	21
SCO20F03	Bhandari Anuradha Mallayya	7	7	8	22	SCO20F03	Bhandari Anuradha Mallayya	5	5	6	16
SCO20F04	Bhome Akash Rajendra	6	6	5	17	SCO20F04	Bhome Akash Rajendra	6	7	8	21
SCO20F05	Bhosale Sanket Pradip	7	7	6	20	SCO20F05	Bhosale Sanket Pradip	6	6	6	18
SCO20F06	Bhosale Suraj Dadaso	7	9	6	22	SCO20F06	Bhosale Suraj Dadaso	7	6	6	19
SCO20F07	Bhujbal Shravan Vijaykumar	6	6	5	17	SCO20F07	Bhujbal Shravan Vijaykumar	7	6	6	19
SCO20F08	Chourasiya Darshan Rajesh	6	6	5	17	SCO20F08	Chourasiya Darshan Rajesh	6	6	5	17
SCO20F09	Deshmukh Hema Tanaji	7	7	6	20	SCO20F09	Deshmukh Hema Tanaji	6	6	7	19
SCO20F10	Deshmukh Sanika Parag	7	9	6	22	SCO20F10	Deshmukh Sanika Parag	6	6	6	18
SCO20F11	Deshmukh Suyash Dilip	6	6	5	17	SCO20F11	Deshmukh Suyash Dilip	6	5	6	17
SCO20F12	Deshpande Amey Chintamani	6	6	6	18	SCO20F12	Deshpande Amey Chintamani	7	6	6	19
SCO20F13	Dhamal Sejal Sunil	6	6	7	19	SCO20F13	Dhamal Sejal Sunil	6	5	6	17
SCO20F14	Gadhave Rohit Sudhir	6	7	6	19	SCO20F14	Gadhave Rohit Sudhir	7	6	7	20
SCO20F15	Gaikwad Akshada Ajit	6	8	6	20	SCO20F15	Gaikwad Akshada Ajit	6	6	7	19
SCO20F16	Gaikwad Sakshi Abasaheb	8	9	7	24	SCO20F16	Gaikwad Sakshi Abasaheb	6	8	7	21
SCO20F17	Ganeshkar Gayatri Anil	6	6	5	17	SCO20F17	Ganeshkar Gayatri Anil	8	6	6	20
SCO20F18	Gawade Nikita Mahendra	7	6	7	20	SCO20F18	Gawade Nikita Mahendra	6	6	5	17
SCO20F19	Ghodekar Suyog Bhagwan	6	7	6	19	SCO20F19	Ghodekar Suyog Bhagwan	6	6	7	19
SCO20F20	Jadhav Neha Santosh	7	6	6	19	SCO20F20	Jadhav Neha Santosh	6	6	6	18
SCO20F21	Jadhav Rupa Dattatray	6	4	6	16	SCO20F21	Jadhav Rupa Dattatray	6	5	6	17
SCO20F22	Jagtap Mayur Sanjay	6	7	6	19	SCO20F22	Jagtap Mayur Sanjay	7	6	6	19
SCO20F23	Jagtap Sayali Sunil	5	6	6	17	SCO20F23	Jagtap Sayali Sunil	8	8	7	23
SCO20F24	Jamadar Asim Zhakirhusen	0	0	0	0	SCO20F24	Jamadar Asim Zhakirhusen	0	0	0	0
SCO20F25	Jankar Tejswini Vijay	6	6	7	19	SCO20F25	Jankar Tejswini Vijay	7	7	8	22
SCO20F26	Kale Renuka Nivrutti	6	7	6	19	SCO20F26	Kale Renuka Nivrutti	6	6	6	18
SCO20F27	Kamble Priyanka Shankar	6	8	6	20	SCO20F27	Kamble Priyanka Shankar	5	5	7	17
SCO20F28	Katkar Yash Pramod	8	9	7	24	SCO20F28	Katkar Yash Pramod	6	6	7	19
SCO20F29	Khopade Bhagyashree Shantaram	6	6	5	17	SCO20F29	Khopade Bhagyashree Shantaram	7	6	7	20
SCO20F30	Kondhalkar Mangesh Shashikant	7	6	7	20	SCO20F30	Kondhalkar Mangesh Shashikant	5	5	7	17

Calculation for CO and PO attainment for all students

Roll NO.	ASSIGNMENT NO.: 1 (Three Units I, II & III)	1	2	3	Total Marks	Roll NO.	ASSIGNMENT NO.: 2(Three Units IV, V & VI)	1	2	3	Total Marks
	Question No.	1	2	3			Question No.	1	2	3	
	Sub-questions						Sub-questions				
	Max. Marks	10	10	10			Max. Marks	10	10	10	
	COs satisfied	I	II	III			COs satisfied	IV	V	VI	
SCO20F31	Kudale Harshada Bharat	6	7	6	19	SCO20F31	Kudale Harshada Bharat	7	6	7	20
SCO20F32	Medhekar Prajakta Ulhas	6	6	7	19	SCO20F32	Medhekar Prajakta Ulhas	6	5	6	17
SCO20F33	Mokashi Shreyash Jaywant	5	5	6	16	SCO20F33	Mokashi Shreyash Jaywant	5	5	7	17
SCO20F34	Pawar Sanket Mohan	6	7	5	18	SCO20F34	Pawar Sanket Mohan	5	6	5	16
SCO20F35	Pujari Mahesh Mandappa	6	5	6	17	SCO20F35	Pujari Mahesh Mandappa	7	6	7	20
SCO20F36	Rajiwade Karan Anil	6	6	5	17	SCO20F36	Rajiwade Karan Anil	5	6	5	16
SCO20F37	Raut Aniket Sanjay	6	6	5	17	SCO20F37	Raut Aniket Sanjay	6	5	6	17
SCO20F38	Salunke Gauri Dattatray	6	6	5	17	SCO20F38	Salunke Gauri Dattatray	6	5	6	17
SCO20F39	Salunkhe Sakshi Sandip	6	5	6	17	SCO20F39	Salunkhe Sakshi Sandip	6	5	6	17
SCO20F40	Sanas Tejal Sunil	5	5	4	14	SCO20F40	Sanas Tejal Sunil	5	5	4	14
SCO20F41	Sankpal Yogesh Ashok	6	6	7	19	SCO20F41	Sankpal Yogesh Ashok	6	6	6	18
SCO20F42	Shahane Mandar Mangesh	7	8	8	23	SCO20F42	Shahane Mandar Mangesh	7	7	8	22
SCO20F43	Shaikh Nilofar Abbas	6	7	6	19	SCO20F43	Shaikh Nilofar Abbas	7	7	7	21
SCO20F44	Shilimkar Sanjana Mahendra	0	0	0	0	SCO20F44	Shilimkar Sanjana Mahendra	0	0	0	0
SCO20F45	Shinde Rashmi Ravindra	7	6	6	19	SCO20F45	Shinde Rashmi Ravindra	6	6	7	19
SCO20F46	Shinde Yash Pradip	7	7	6	20	SCO20F46	Shinde Yash Pradip	7	6	7	20
SCO20F47	Tanpure Sneha Pradip	6	7	6	19	SCO20F47	Tanpure Sneha Pradip	6	6	6	18
SCO20F48	Tarade Shreyash Jagannath	6	6	6	18	SCO20F48	Tarade Shreyash Jagannath	7	7	6	20
SCO20F49	Ubhe Akash Avinash	7	7	7	21	SCO20F49	Ubhe Akash Avinash	6	7	7	20
SCO20F50	Vedpathak Vaishnavi Sharad	5	6	7	18	SCO20F50	Vedpathak Vaishnavi Sharad	8	5	6	19
SCO20F51	Vishwakarma Rohit Pappu	7	6	6	19	SCO20F51	Vishwakarma Rohit Pappu	6	7	6	19
SCO20F52	Vitkar Pandurang Datta	7	7	8	22	SCO20F52	Vitkar Pandurang Datta	6	6	6	18
SCO20F53	Wavhal Pranav Sachin	6	6	6	18	SCO20F53	Wavhal Pranav Sachin	6	5	6	17
SCO21D54	Talekar Prerana Vijay	6	7	6	19	SCO21D54	Talekar Prerana Vijay	6	7	7	20
SCO21D55	Ubale Atharva Prashant	7	6	6	19	SCO21D55	Ubale Atharva Prashant	7	6	7	20
SCO21D56	Jagtap Vaishnavi Sanjay	7	7	8	22	SCO21D56	Jagtap Vaishnavi Sanjay	8	8	7	23
SCO21D57	Danavale Vaishnvee Santosh	6	6	7	19	SCO21D57	Danavale Vaishnvee Santosh	8	7	7	22
SCO21D58	Malusare Shamal Mukund	6	6	7	19	SCO21D58	Malusare Shamal Mukund	7	6	6	19
SCO21D59	Dharpale Nikita Ankush	7	7	7	21	SCO21D59	Dharpale Nikita Ankush	8	7	7	22
SCO21D60	Gavhane Sanika Dasharath	6	8	6	20	SCO21D60	Gavhane Sanika Dasharath	7	7	8	22

Calculation for CO and PO attainment for all students

	ASSIGNMENT NO.: 1 (Three Units I, II & III)						ASSIGNMENT NO.: 2(Three Units IV, V & VI)				
Roll NO.	Question No.	1	2	3	Total Marks	**Roll NO.**	Question No.	1	2	3	Total Marks
	Sub-questions						Sub-questions				
	Max. Marks	10	10	10			Max. Marks	10	10	10	
	COs satisfied	I	II	III			COs satisfied	IV	V	VI	
SCO21D61	Dhamal Nikita Himmat	7	7	6	20	SCO21D61	Dhamal Nikita Himmat	6	7	6	19
SCO21D62	Pawar Akanksha Ashok	6	7	6	19	SCO21D62	Pawar Akanksha Ashok	6	6	6	18
SCO21D63	Dhumal Sanika Kanhaiyalal	6	6	6	18	SCO21D63	Dhumal Sanika Kanhaiyalal	6	5	6	17
SCO21D64	Bhosale Sayali Pravin	5	7	5	17	SCO21D64	Bhosale Sayali Pravin	6	7	7	20
SCO21D65	Salvi Sankita Sudhakar	5	6	7	18	SCO21D65	Salvi Sankita Sudhakar	7	6	7	20
SCO21D66	Vhanmane Revansidh Mahadev	7	6	6	19	SCO21D66	Vhanmane Revansidh Mahadev	8	8	7	23
SCO21D67	Deep Shah	7	7	8	22	SCO21D67	Deep Shah	8	7	7	22
SCO21D68	Vatte Apeksha Sanjay	6	6	6	18	SCO21D68	Vatte Apeksha Sanjay	6	7	6	19
SCO21D69	Vanjari Vishwajeet Sampat	6	7	6	19	SCO21D69	Vanjari Vishwajeet Sampat	7	6	6	19
SCO21D70	Kamble Akshay Bapu	6	7	7	20	SCO21D70	Kamble Akshay Bapu	6	7	7	20
SCO21D71	Bhandare Karan Sunil	6	7	6	19	SCO21D71	Bhandare Karan Sunil	6	6	7	19
SCO21D72	Chinchakar Giridhar Ramesh	6	7	6	19	SCO21D72	Chinchakar Giridhar Ramesh	7	7	6	20
SCO21D73	Malekar Pratiksha Sharad	6	5	5	16	SCO21D73	Malekar Pratiksha Sharad	6	6	6	18
SCO21D74	Bhapkar Vaishnavi Dadasaheb	6	7	6	19	SCO21D74	Bhapkar Vaishnavi Dadasaheb	6	8	7	21
SCO21D75	Jarad Devyani Vishwas	5	7	6	18	SCO21D75	Jarad Devyani Vishwas	6	7	7	20
SCO21D76	Yadav Rutuja Deepak	5	6	7	18	SCO21D76	Yadav Rutuja Deepak	7	6	6	19
SCO21D77	Shreeharsh Suhas Puntambekar	6	7	7	20	SCO21D77	Shreeharsh Suhas Puntambekar	6	8	7	21
	Target Value	5	5	5			**Target Value**	5	5	5	
	No. of students above class average	39	38	38			No. of students above class average	39	39	38	
	% of students above the class average	97.50	95.00	95.00			% of students above the class average	97.50	97.50	95.00	
	CO Attainment Level from Assignment I	3	3	3			CO Attainment Level from Assignment II	3	3	3	

		Calculation for CO and PO attainment for all students					
Expt. No.	1	2	3	4	5	6	7
COs satisfied	I,II	I,II	II,III	III,IV	III,IV	III,IV	II,VI
Roll. NO.							
SCO20F01	10	9	7	6	8	8	9
SCO20F02	6	6	7	6	6	6	5
SCO20F03	6	6	7	7	6	7	7
SCO20F04	9	8	9	8	9	7	7
SCO20F05	5	5	6	6	6	6	7
SCO20F06	6	6	7	6	6	6	7
SCO20F07	7	6	7	6	7	6	6
SCO20F08	6	7	7	7	6	7	6
SCO20F09	6	6	7	7	6	7	7
SCO20F10	9	8	9	8	9	7	7
SCO20F11	5	5	6	6	6	6	7
SCO20F12	6	6	7	6	6	6	7
SCO20F13	7	6	7	6	7	6	6
SCO20F14	6	7	7	7	6	7	6
SCO20F15	7	6	6	5	6	6	5
SCO20F16	9	8	8	8	8	7	8
SCO20F17	6	6	6	7	7	6	6
SCO20F18	7	8	8	7	6	7	6
SCO20F19	7	6	6	6	6	7	7
SCO20F20	7	7	6	7	6	7	7
SCO20F21	6	5	6	5	6	5	5
SCO20F22	7	6	6	6	6	7	6
SCO20F23	6	6	5	5	5	6	5
SCO20F24	4	3	3	4	4	4	3
SCO20F25	6	6	5	6	5	5	6
SCO20F26	6	6	6	5	6	6	6
SCO20F27	6	6	5	6	5	6	6
SCO20F28	6	6	5	6	6	7	6
SCO20F29	6	6	5	6	7	6	6
SCO20F30	6	6	6	6	7	6	6
SCO20F31	7	6	8	8	8	8	9
SCO20F32	6	6	6	7	6	6	7
SCO20F33	7	6	8	8	8	8	9
SCO20F34	6	6	5	5	5	6	5
SCO20F35	6	7	7	5	6	6	7
SCO20F36	6	6	5	6	5	5	6
SCO20F37	6	6	6	5	6	6	6
SCO20F38	6	6	5	6	5	6	6

Calculation for CO and PO attainment for all students							
Expt. No.	1	2	3	4	5	6	7
COs satisfied	I,II	I,II	II,III	III,IV	III,IV	III,IV	II,VI
Roll. NO.							
SCO20F39	6	6	5	6	6	7	6
SCO20F40	6	6	5	6	7	6	6
SCO20F41	6	6	6	6	7	6	6
SCO20F42	7	6	8	8	8	8	9
SCO20F43	8	8	7	8	6	6	7
SCO20F44							
SCO20F45	6	7	7	6	7	6	6
SCO20F46	6	7	6	6	6	7	7
SCO20F47	7	6	6	7	6	7	7
SCO20F48	6	7	7	7	6	6	6
SCO20F49	7	7	6	7	6	6	6
SCO20F50	6	7	7	7	7	6	6
SCO20F51	7	7	8	7	7	6	6
SCO20F52	7	6	7	6	6	6	6
SCO20F53	6	6	6	6	7	7	7
SCO21D54	7	6	7	6	6	7	8
SCO21D55	8	8	7	8	8	8	7
SCO21D56	7	8	8	7	8	8	9
SCO21D57	8	7	8	7	8	7	7
SCO21D58	6	7	6	7	7	6	7
SCO21D59	7	7	7	6	7	7	7
SCO21D60	7	6	7	8	8	9	8
SCO21D61	6	7	7	6	7	7	6
SCO21D62	7	6	6	7	6	7	7
SCO21D63	7	6	6	6	6	7	6
SCO21D64	6	6	6	6	6	5	5
SCO21D65	6	7	7	6	6	7	6
SCO21D66	8	8	7	8	8	8	7
SCO21D67	7	8	8	7	8	8	9
SCO21D68	8	7	8	7	8	7	7
SCO21D69	6	7	6	7	7	6	7
SCO21D70	7	7	7	6	7	7	7
SCO21D71	7	6	7	8	8	9	8
SCO21D72	8	7	8	7	8	7	7
SCO21D73	6	7	6	7	7	6	7
SCO21D74	7	7	7	6	7	7	7
SCO21D75	7	6	7	8	8	9	8
SCO21D76	6	7	7	6	7	7	6

Calculation for CO and PO attainment for all students							
Expt. No.	1	2	3	4	5	6	7
COs satisfied	I,II	I,II	II,III	III,IV	III,IV	III,IV	II,VI
Roll. NO. SCO21D77	7	6	7	8	6	7	6
Target Value	6	6	6	6	6	6	6
No. of students above class average	73	72	65	68	69	71	69
% of students above the class average	94.81	93.51	84.42	88.31	89.61	92.21	89.61
CO Attainment Level from Lab Work	3	3	2	2	2	2	3

Calculation for CO and PO attainment for all students

COs Satisfied

Assessment Tool	Satisfied COs
Practical	I,II,III,IV,V,VI
Term Work	I,II,III,IV,V,VI

CO Attainment through PRACTICAL

Satisfied COs	Attainment
I,II,III,IV,V,VI	3

CO Attainment through TERM WORK

Satisfied COs	Attainment
I,II,III,IV,V,VI	3

PRACTICAL

Roll No.	Marks
SCO20F01	20
SCO20F02	18
SCO20F03	19
SCO20F04	21
SCO20F05	20
SCO20F06	20
SCO20F07	18
SCO20F08	21
SCO20F09	20
SCO20F10	15
SCO20F11	20
SCO20F12	19
SCO20F13	22
SCO20F14	22
SCO20F15	20
SCO20F16	14
SCO20F17	20
SCO20F18	20
SCO20F19	22
SCO20F20	18
SCO20F21	20
SCO20F22	20
SCO20F23	16
SCO20F24	22
SCO20F25	20
SCO20F26	22
SCO20F27	21
SCO20F28	21
SCO20F29	18
SCO20F30	20
SCO20F31	17
SCO20F32	19
SCO20F33	21
SCO20F34	21
SCO20F35	14
SCO20F36	18
SCO20F37	15
SCO20F38	21
SCO20F39	18
SCO20F40	20
SCO20F41	18
SCO20F42	21
SCO20F43	18
SCO20F44	18
SCO20F45	21
SCO20F46	20
SCO20F47	23
SCO20F48	20
SCO20F49	20

TERM WORK

Roll No.	Marks
SCO20F01	14
SCO20F02	22
SCO20F03	22
SCO20F04	23
SCO20F05	22
SCO20F06	23
SCO20F07	23
SCO20F08	22
SCO20F09	20
SCO20F10	23
SCO20F11	21
SCO20F12	23
SCO20F13	20
SCO20F14	21
SCO20F15	22
SCO20F16	23
SCO20F17	21
SCO20F18	16
SCO20F19	20
SCO20F20	23
SCO20F21	22
SCO20F22	22
SCO20F23	23
SCO20F24	23
SCO20F25	23
SCO20F26	23
SCO20F27	21
SCO20F28	23
SCO20F29	23
SCO20F30	23
SCO20F31	23
SCO20F32	16
SCO20F33	22
SCO20F34	22
SCO20F35	20
SCO20F36	15
SCO20F37	21
SCO20F38	22
SCO20F39	14
SCO20F40	23
SCO20F41	22
SCO20F42	20
SCO20F43	20
SCO20F44	23
SCO20F45	22
SCO20F46	19
SCO20F47	22
SCO20F48	18
SCO20F49	20

SCO20F50	21		SCO20F50	17
SCO20F51	22		SCO20F51	19
SCO20F52	20		SCO20F52	18
SCO20F53	22		SCO20F53	23
SCO21D54	19		SCO21D54	23
SCO21D55	22		SCO21D55	22
SCO21D56	21		SCO21D56	23
SCO21D57	20		SCO21D57	23
SCO21D58	21		SCO21D58	22
SCO21D59	23		SCO21D59	21
SCO21D60	21		SCO21D60	20
SCO21D61	23		SCO21D61	22
SCO21D62	16		SCO21D62	15
SCO21D63	21		SCO21D63	22
SCO21D64	15		SCO21D64	22
SCO21D65	18		SCO21D65	22
SCO21D66	19		SCO21D66	22
SCO21D67	18		SCO21D67	21
SCO21D68	18		SCO21D68	20
SCO21D69	20		SCO21D69	19
SCO21D70	20		SCO21D70	23
SCO21D71	19		SCO21D71	22
SCO21D72	15		SCO21D72	18
SCO21D73	14		SCO21D73	17
SCO21D74	20		SCO21D74	22
SCO21D75	13		SCO21D75	15
SCO21D76	19		SCO21D76	22
SCO21D77	22		SCO21D77	22

Target Value	15	Target Value	15
No. of students above class average	73	No. of students above class average	75
% of students above the class average	94.81	% of students above the class average	97.40

CO Attainment Level from Lab Work	3	CO Attainment Level from Lab Work	3

Calculation for CO and PO attainment for all students

COs satisfied by In	I, II, III, IV

COs satisfied by END SEM	I, II, III, IV, V, VI

ONLINE Exam		END SEM Exam	
Roll No.	Marks	Roll No.	Marks
SCO20F01	16	SCO20F01	56
SCO20F02	26	SCO20F02	45
SCO20F03	26	SCO20F03	55
SCO20F04	29	SCO20F04	50
SCO20F05	26	SCO20F05	60
SCO20F06	28	SCO20F06	70
SCO20F07	28	SCO20F07	56
SCO20F08	26	SCO20F08	39
SCO20F09	24	SCO20F09	60
SCO20F10	27	SCO20F10	57
SCO20F11	25	SCO20F11	60
SCO20F12	29	SCO20F12	60
SCO20F13	24	SCO20F13	50
SCO20F14	25	SCO20F14	60
SCO20F15	26	SCO20F15	60
SCO20F16	28	SCO20F16	49
SCO20F17	25	SCO20F17	59
SCO20F18	19	SCO20F18	59
SCO20F19	24	SCO20F19	55
SCO20F20	29	SCO20F20	49
SCO20F21	26	SCO20F21	52
SCO20F22	26	SCO20F22	53
SCO20F23	27	SCO20F23	57
SCO20F24	30	SCO20F24	57
SCO20F25	28	SCO20F25	57
SCO20F26	30	SCO20F26	57
SCO20F27	25	SCO20F27	56
SCO20F28	30	SCO20F28	69
SCO20F29	28	SCO20F29	53
SCO20F30	30	SCO20F30	67
SCO20F31	30	SCO20F31	55
SCO20F32	19	SCO20F32	55
SCO20F33	29	SCO20F33	55
SCO20F34	26	SCO20F34	66
SCO20F35	23	SCO20F35	50
SCO20F36	18	SCO20F36	52
SCO20F37	25	SCO20F37	46
SCO20F38	30	SCO20F38	57
SCO20F39	16	SCO20F39	52
SCO20F40	27	SCO20F40	48
SCO20F41	26	SCO20F41	63
SCO20F42	23	SCO20F42	59
SCO20F43	23	SCO20F43	57
SCO20F44	30	SCO20F44	32
SCO20F45	26	SCO20F45	56
SCO20F46	22	SCO20F46	62
SCO20F47	28	SCO20F47	52
SCO20F48	21	SCO20F48	56
SCO20F49	24	SCO20F49	52
SCO20F50	20	SCO20F50	45

SCO20F51	22		SCO20F51	45
SCO20F52	21		SCO20F52	49
SCO20F53	27		SCO20F53	60
SCO21D54	27		SCO21D54	53
SCO21D55	30		SCO21D55	57
SCO21D56	27		SCO21D56	55
SCO21D57	29		SCO21D57	53
SCO21D58	28		SCO21D58	49
SCO21D59	25		SCO21D59	55
SCO21D60	23		SCO21D60	42
SCO21D61	28		SCO21D61	59
SCO21D62	18		SCO21D62	48
SCO21D63	28		SCO21D63	42
SCO21D64	26		SCO21D64	62
SCO21D65	26		SCO21D65	50
SCO21D66	26		SCO21D66	63
SCO21D67	25		SCO21D67	43
SCO21D68	24		SCO21D68	52
SCO21D69	22		SCO21D69	52
SCO21D70	29		SCO21D70	59
SCO21D71	28		SCO21D71	52
SCO21D72	21		SCO21D72	49
SCO21D73	20		SCO21D73	59
SCO21D74	28		SCO21D74	63
SCO21D75	18		SCO21D75	46
SCO21D76	26		SCO21D76	45
SCO21D77	26		SCO21D77	45

Target Value	20		Target Value	45
No. of students above class average	70		No. of students above class avg.	72
% of students above the class	90.91		% of students above the class avg.	93.51
CO Attainment Level from Lab Work	3		CO Attainment Level from Lab Work	3

CO ATTAINMENT

		COs	I	II	III	IV	V	VI
1	Internal Assessment	Assessment Tools						
		Assignment I	3	3	3	0	0	0
		Assignment II	0	0	0	3	3	3
3		Lab Work	3	3	2	2	2	3
4		End-Term Exam	3	3	2	2	2	2
		Total Internal	3	3	2.333	2	2	3
1	External Assessment	Oral	0	0	0	0	0	0
2		Term Work	3	3	3	3	3	3
3		Practical	3	3	3	3	3	3
4		Online Exam	3	3	3	3	3	3
5		End Sem Exam	3	3	3	3	3	3
		Total External	3	3	3	3	3	3
	Final CO Attainment		3	3	2.8	2.8	2.8	2.9

CO Attainment = 0.7*(Summation of CO attaiment thr' EXTL. Assessment tools) + 0.3*(Summation of CO attaiment thr' INTL. Assessment tools)

PO ATTAINMENT

POs	CO 1	CO 2	CO 3	CO 4	CO 5	CO 6	Average
I	2.7		2.75		2.75		1.82
II	2.85	2.85		2.85	2.7		2.82
III		2.85	2.75	2.85		2.65	2.8
IV		2.7					2.7
V						2.65	2.65
VI							0
VII			2.75				2.75
VIII			2.75	2.85			2.8
IX							0
X							0
XI							0
XII							0

Note: 1).70 % weitage is given to external assessment tools and 30 % weitage is given to internal assessment tools, 2). Internal and external tools may vary as per the course

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