Academic Year: 2018-19
Class : B.E. (Electrical Engg.) Sem-VII

Subject: Control System-II
Name of Faculty: Mr.Ratnadeep Keer

Program Outcomes(Pos) Engineering Graduates will 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, and environmental considerations.
PO4	**Conduct investigations of complex problems:** 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.
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 practice.
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 the 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:** 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 effective presentations, and give and receive clear instructions.
PO11	**Project management and finance:** Demonstrate knowledge and understanding of the 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 environments.
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.

VPM'S Maharshi Parshuram College of Engineering, Velneshwar, Ratnagiri
Department of Computer Engineering

Cos and Pos Mapping

Academic Year: 2018-19 **Subject: Control System-II**
Class : B.E. (Electrical Engg.) Sem-VII **Name of Faculty: Mr.Ratnadeep Keer**

Course Outcomes(Cos) Upon successful completion of this course, the students will able to:	
CO1	Students will be able to analyze & design performance for improvement of different controllers.
CO2	Students will learn application of different controllers used in industry.
CO3	Students will be able to apply knowledge of state space & learn design techniques used for Improving system performance.
C04	Understanding concepts & analysis of digital control system for improvement of system.
CO5	Learning & understanding basic concepts and programming of Programmable logic controllers(PLC).
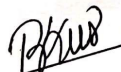
CO	Program Outcomes to CO Mapping											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	✔	✔	✔		✔							
2	✔		✔									
3	✔	✔	✔	✔		✔						
4					✔							
5				✔	✔					✔		
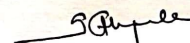
CO	Program Outcomes to CO Weightage											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	1	2	3		2							
2	2		3									
3	2	3	3	3		2						
4					3							
5				2	3					1		

3 : Substantial (High/Strong)   2: Moderate (Medium)   1: Slight (Low/Poor)

Sign of Subject Teacher **Sign of HOD**

MPM'S Maharshi Parshuram College of Engineering, Velneshwar, Ratnagiri
Department of Electrical Engineering
Attainment of Cos

Academic Year-2018-19
Class : B.E. (Electrical Engg.) Sem-VII

Subject: Control System-II
Name of Faculty: Mr.Ratnadeep Keer

Measuring CO's attainment through Internal Assessment - I

Roll No.	Name of Students	Q1 Total	Q2 Total	Q3 Total	Total
		10	5	5	20
E701	Abhyankar Avdhut Ramesh	7	5	3	15
E702	Adamkar Ketan Ramesh	7	5	2	14
E703	Bandiwadekar Pravin Shantaram	4	5	0	9
E704	Bhatkar Siddhika Sushant	8	5	1	14
E705	Bhosale Swamin Sanjay	7	4	2	13
E706	Bhosale Tejas Shankar	0	5	0	5
E707	Borkar Prasad Deepak	4	4	0	8
E708	Deorukhkar Sheetal Nandkumar	7	2	1	10
E709	Dhulap Pratik Ramchandra	9	5	4	18
E710	Gawade Sagar Suresh	8	5	4	17
E711	Gawas Girish Ashok	8	5	3	16
E712	Gonbare Vikaram Laxman	10	5	5	20
E713	Haldankar Sachin Gopichand	9	4	0	13
E714	Harekar Suraj Chandrakant	8	5	2	15
E715	Jadhav Pankaja Maruti	7	5	2	14
E716	Kadam Prajakta Dipak	8	5	1	14
E717	Kale Sanket Nana	7	3	0	10
E718	Kerkar Shivram Keshav	7	5	3	15
E719	Khandzode Bhushan Raju	5	4	2	11
E720	Kulkarni Gajanan Govind	9	5	2	16
E721	Lad Shraddha Vikas	5	5	3	13
E722	Lingayat Chetan Shashikant	5	4	1	10
E723	Londhe Dinesh Vinod	8	3	4	15
E724	Mhadeshwar Siddesh Anant	3	5	3	11
E725	Nafe Gaurav Ajit	3	5	1	9
E726	Narvekar Shubham Sambhaji	8	5	4	17
E727	Padhye Omkar Hemant	7	5	1	13
E728	Pansare Suraj Dipak	8	2	1	11
E729	Patel Prajit Jitendra	6	3	0	9
E730	Phalake Kalpesh Krishna	7	1	0	8
E731	Sayyad Saibaz Tanveer	5	5	0	10
E732	Shetye Shubham Parag	6	5	0	11
E733	Shirgoakar Rajat Alias Niranjan Deepak	10	2	0	12

E734	Vasage Akshay Balkrishna	5	5	3	13
E735	Vavrangankar Sudin Rama	7	5	4	16
E736	Yadav Rahul Shyam	6	3	2	11
E737	Renje Ruturaj Ram	6	1	3	10
E738	Havaldar Priya S.	6	5	4	15
E739	Nalawade Akshay A.	4	2	0	6
E740	Kadam Sujay M.	3	0	0	3

Ques.	Course Outcomes		
	CO1	CO3	
Q1	40%	60%	
Q2	100%	0%	
Q3	0%	100%	

CO	Maximum Marks of Cos for Q1	Maximum Marks of Cos for Q2	Maximum Marks of Cos for Q3	Total Cos Marks
CO1	4	5	0	9
CO3	6	0	5	11

Roll No.	Name of Students	Q1		Total	Q2		Total	Q3		Total	Grand Total
		CO1	CO3		CO1	CO3		CO1	CO3		
				10			5			5	20
E701		2.8	4.2	7	5	0	5	0	3	3	15
E702	Adamkar Ketan Ramesh	2.8	4.2	7	5	0	5	0	2	2	14
E703	Bandiwadekar Pravin Shantaram	1.6	2.4	4	5	0	5	0	0	0	9
E704	Bhatkar Siddhika Sushant	3.2	4.8	8	5	0	5	0	1	1	14
E705	Bhosale Swamin Sanjay	2.8	4.2	7	4	0	4	0	2	2	13
E706	Bhosale Tejas Shankar	0	0	0	5	0	5	0	0	0	5
E707	Borkar Prasad Deepak	1.6	2.4	4	4	0	4	0	0	0	8
E708	Deorukhkar Sheetal Nandkumar	2.8	4.2	7	2	0	2	0	1	1	10
E709	Dhulap Pratik Ramchandra	3.6	5.4	9	5	0	5	0	4	4	18
E710	Gawade Sagar Suresh	3.2	4.8	8	5	0	5	0	4	4	17
E711	Gawas Girish Ashok	3.2	4.8	8	5	0	5	0	3	3	16
E712	Gonbare Vikaram Laxman	4	6	10	5	0	5	0	5	5	20
E713	Haldankar Sachin Gopichand	3.6	5.4	9	4	0	4	0	0	0	13
E714	Harekar Suraj Chandrakant	3.2	4.8	8	5	0	5	0	2	2	15
E715	Jadhav Pankaja Maruti	2.8	4.2	7	5	0	5	0	2	2	14
E716	Kadam Prajakta Dipak	3.2	4.8	8	5	0	5	0	1	1	14
E717	Kale Sanket Nana	2.8	4.2	7	3	0	3	0	0	0	10
E718	Kerkar Shivram Keshav	2.8	4.2	7	5	0	5	0	3	3	15
E719	Khandzode Bhushan Raju	2	3	5	4	0	4	0	2	2	11
E720	Kulkarni Gajanan Govind	3.6	5.4	9	5	0	5	0	2	2	16
E721	Lad Shraddha Vikas	2	3	5	5	0	5	0	3	3	13
E722	Lingayat Chetan Shashikant	2	3	5	4	0	4	0	1	1	10

Roll No.	Name									
E723	Londhe Dinesh Vinod	3.2	4.8	8	3	0	3	0	4	4	15
E724	Mhadeshwar Siddesh Anant	1.2	1.8	3	5	0	5	0	3	3	11
E725	Nafe Gaurav Ajit	1.2	1.8	3	5	0	5	0	1	1	9
E726	Narvekar Shubham Sambhaji	3.2	4.8	8	5	0	5	0	4	4	17
E727	Padhye Omkar Hemant	2.8	4.2	7	5	0	5	0	1	1	13
E728	Pansare Suraj Dipak	3.2	4.8	8	2	0	2	0	1	1	11
E729	Patel Prajit Jitendra	2.4	3.6	6	3	0	3	0	0	0	9
E730	Phalake Kalpesh Krishna	2.8	4.2	7	1	0	1	0	0	0	8
E731	Sayyad Saibaz Tanveer	2	3	5	5	0	5	0	0	0	10
E732	Shetye Shubham Parag	2.4	3.6	6	5	0	5	0	0	0	11
E733	Shirgoakar Rajat Alias Niranjan Deepak	4	6	10	2	0	2	0	0	0	12
E734	Vasage Akshay Balkrishna	2	3	5	5	0	5	0	3	3	13
E735	Vayangankar Sudin Rama	2.8	4.2	7	5	0	5	0	4	4	16
E736	Yadav Rahul Shyam	2.4	3.6	6	3	0	3	0	2	2	11
E737	Remje Ruturaj Ram	2.4	3.6	6	1	0	1	0	3	3	10
E738	Havaldar Priya S.	2.4	3.6	6	5	0	5	0	4	4	15
E739	Nalawade Akshay A.	1.6	2.4	4	2	0	2	0	0	0	6
E740	Kadam Sujay M.	1.2	1.8	3	0	0	0	0	0	0	3

Roll No.	Name of Students	CO1 Attainment	% CO1 Attainment	CO1 Attainment status	CO3 Attainment	% CO3 Attainment	CO3 Attainment status
E701	Abhyankar Avdhut Ramesh	7.8	87	CO1 Attained	7.2	65	CO3 Attained
E702	Adamkar Ketan Ramesh	7.8	87	CO1 Attained	6.2	56	CO3 Attained
E703	Bandiwadekar Pravin Shantaram	6.6	73	CO1 Attained	2.4	22	CO3 Failed
E704	Bhatkar Siddhika Sushant	8.2	91	CO1 Attained	5.8	53	CO3 Attained
E705	Bhosale Swamin Sanjay	6.8	76	CO1 Attained	6.2	56	CO3 Attained
E706	Bhosale Tejas Shankar	5	56	CO1 Attained	0	0	CO3 Failed
E707	Borkar Prasad Deepak	5.6	62	CO1 Attained	2.4	22	CO3 Failed
E708	Deorukhkar Sheetal Nandkumar	4.8	53	CO1 Attained	5.2	47	CO3 Failed
E709	Dhulap Pratik Ramchandra	8.6	96	CO1 Attained	9.4	85	CO3 Attained
E710	Gawade Sagar Suresh	8.2	91	CO1 Attained	8.8	80	CO3 Attained
E711	Gawas Girish Ashok	8.2	91	CO1 Attained	7.8	71	CO3 Attained
E712	Gonbare Vikaram Laxman	9	100	CO1 Attained	11	100	CO3 Attained
E713	Haldankar Sachin Gopichand	7.6	84	CO1 Attained	5.4	49	CO3 Failed
E714	Harekar Suraj Chandrakant	8.2	91	CO1 Attained	6.8	62	CO3 Attained
E715	Jadhav Pankaja Maruti	7.8	87	CO1 Attained	6.2	56	CO3 Attained
E716	Kadam Prajakta Dipak	8.2	91	CO1 Attained	5.8	53	CO3 Attained
E717	Kale Sanket Nana	5.8	64	CO1 Attained	4.2	38	CO3 Failed

E718	Karkar Shivram Keshav	7.8	87	CO1 Attained	7.2	65	CO3 Attained
E719	Khandzode Bhushan Raju	6	67	CO1 Attained	5	45	CO3 Failed
E720	Kulkarni Gajanan Govind	8.6	96	CO1 Attained	7.4	67	CO3 Attained
E721	Lad Shraddha Vikas	7	78	CO1 Attained	6	55	CO3 Attained
E722	Lingayat Chetan Shashikant	6	67	CO1 Attained	4	36	CO3 Failed
E723	Londhe Dinesh Vinod	6.2	69	CO1 Attained	8.8	80	CO3 Attained
E724	Mhadeshwar Siddesh Anant	6.2	69	CO1 Attained	4.8	44	CO3 Failed
E725	Nafe Gaurav Ajit	6.2	69	CO1 Attained	2.8	25	CO3 Failed
E726	Narvekar Shubham Sambhaji	8.2	91	CO1 Attained	8.8	80	CO3 Attained
E727	Padhye Omkar Hemant	7.8	87	CO1 Attained	5.2	47	CO3 Failed
E728	Pansare Suraj Dipak	5.2	58	CO1 Attained	5.8	53	CO3 Attained
E729	Patel Prajit Jitendra	5.4	60	CO1 Attained	3.6	33	CO3 Failed
E730	Phalake Kalpesh Krishna	3.8	42	CO1 Failed	4.2	38	CO3 Failed
E731	Sayyad Saibaz Tanveer	7	78	CO1 Attained	3	27	CO3 Failed
E732	Shetye Shubham Parag	7.4	82	CO1 Attained	3.6	33	CO3 Failed
E733	Shirgoakar Rajat Alias Niranjan Deepak	6	67	CO1 Attained	6	55	CO3 Attained
E734	Vasage Akshay Balkrishna	7	78	CO1 Attained	6	55	CO3 Attained
E735	Vayangankar Sudin Rama	7.8	87	CO1 Attained	8.2	75	CO3 Attained
E736	Yadav Rahul Shyam	5.4	60	CO1 Attained	5.6	51	CO3 Attained
E737	Remje Ruturaj Ram	3.4	38	CO1 Failed	6.6	60	CO3 Attained
E738	Havaldar Priya S.	7.4	82	CO1 Attained	7.6	69	CO3 Attained
E739	Nalawade Akshay A.	3.6	40	CO1 Failed	2.4	22	CO3 Failed
E740	Kadam Sujay M.	1.2	13	CO1 Failed	1.8	16	CO3 Failed
	Total COs Attainment	264.8			225.2		
	Avgrage COs Attainment	6.62			5.63		

Cos Attainment	CO1	% CO1	CO3	%CO3
Total number of Students meeting requirements	36	90	23	57.5
Total number of Students not meeting requirements	4		17	
Total Students	40		40	

% is greater than or equal to 60%

YES	NO

Sign of Subject Teacher

Sign of HOD

Academic Year-2018-19   Subject: Applied Mathematics-III
Class : S.E. (Electrical Engg.) Sem-III   Name of Faculty:Gondhalekar Rohan S.

Program Outcomes(Pos) Engineering Graduates will 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, and environmental considerations.
PO4	**Conduct investigations of complex problems:** 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.
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 practice.
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 the 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:** 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 effective presentations, and give and receive clear instructions.
PO11	**Project management and finance:** Demonstrate knowledge and understanding of the 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 environments.
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.

VPM'S Maharshi Parshuram College of Engineering, Velneshwar, Ratnagiri
Department of Electrical Engineering
Cos and Pos Mapping

Academic Year: 2018-19
Class : S.E. (Electrical Engg.) Sem-III

Subject: Applied Mathematics-III
Name of Faculty: Gondhalekar Rohan

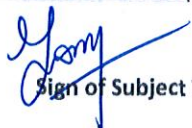| Course Outcomes(Cos)	
Upon successful completion of this course, the students will able to:	
CO1	To Demonstrate basic Knowledge of Laplace Transform
CO2	To Demonstrate basic Knowledge of Fourier Series
CO3	To Demonstrate basic Knowledge of Bessal Function
C04	To Demonstrate basic Knowledge of Vector Algebra
CO5	To Demonstrate basic Knowledge of Complex Variable
CO6	To Indetify and Modelof the problem of the Field of Electrical Engineering and Solve It using mathematical techniques.

CO	Program Outcomes to CO Mapping											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	✔	✔	✔									
2	✔	✔	✔									
3	✔		✔									
4	✔	✔	✔									
5	✔	✔	✔									
6	✔	✔	✔	✔								✔

CO	Program Outcomes to CO Weightage											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	2	1	1									
2	2	1	1									
3	2		1									
4	2	1	1									
5	2	1	1	1								
6	3	2	1	1								1

3 : Substantial (High/Strong)   2: Moderate (Medium)   1: Slight (Low/Poor)

Sign of Subject Teacher

Sign of HOD

VPM'S Maharshi Parshuram College of Engineering, Velneshwar, Ratnagiri
Department of Electrical Engineering
Attainment of Cos

Academic Year-2018-19   Subject: Applied Mathematics-III
Class : S.E. (Electrical Engg.) Sem-III   Name of Faculty:Gondhalekar Rohan S.

Measuring CO's attainment through Internal Assessment - I

Roll No.	Name of Students	Q1 Total 10	Q2 Total 5	Q3 Total 5	Total 20
E701	Balkate Prathmesh Prakash	5	3	2	10
E702	Chaughule Nikhil Deepak	8	4	2	14
E703	Chougale Waseem Mubarak	9	4	5	18
E704	Ghanekar Abhay Jayawant	4	1	3	8
E705	Lohar Shivani Sambhaji	9	2	2	13
E706	Palande Shreya Ajit	10	3	5	18
E707	Pawaskar Bhushan Bhagyavan	7	1	3	11
E708	Shigwan Akanksha Vijay	9	3	1	13
E709	Devalekar Shraddha Sadanand	7	2	4	13
E710	Wadkar Affan Riyaz	9	3	5	17
E711	Kolge Tushar Santosh	6	4	2	12
E712	Burondkar Sanket Pandurang	6	2	0	8
E713	Pawar Darshita S.	1	0	0	1
E714	Tharval Anuj Sandip	10	5	0	15
E715	Khandagale Tanvi Tukaram	4	0	1	5
E716	Sawant Saurabh Rajendra	8	1	0	9
E717	Kalambate Pratik Pramod	7	1	0	8
E718	Juwale Akshay Ramchandar	8	2	1	11
E719	Shirke Sharvari Shyam	10	4	3	17
E720	Bhosale Atul Sanjay	5	5	3	13
E721	Sarafdar Vinit S	9	5	2	16
E722	Thorat Abhishek V	9	4	3	16
E723	Kutekar Omkar V	6	3	0	9
E724	Shirkar Tanay Vijay	10	4	3	17
E725	Solkar Prathamesh B	7	3	5	15
E726	Prasade Devendra Sharad	8	0	0	8
E727	Harachkar Sudesh Bhikaji	9	5	4	18
E728	Shigawan Priyanka Vijay	4	0	4	8
E729	Warang Prathmesh	10	5	4	19
E730	Bhojane Akshay S	7	1	0	8

Ques.	Course Outcomes	
	CO1	CO2
Q1	60%	40%
Q2	50%	50%
Q3	50%	50%

CO	Maximum Marks of Cos for Q1	Maximum Marks of Cos for Q2	Maximum Marks of Cos for Q3	Total Cos Marks
CO1	6	2.5	2.5	11
CO2	4	2.5	2.5	9

Roll No.	Name of Students	Q1 CO1	Q1 CO2	Total 10	Q2 CO1	Q2 CO2	Total 5	Q3 CO1	Q3 CO2	Total 5	Grand Total 20
E701	Balkate Prathmesh Prakash	3	2	5	1.5	1.5	3	1	1	2	10
E702	Chaughule Nikhil Deepak	4.8	3.2	8	2	2	4	1	1	2	14
E703	Chougale Waseem Mubarak	5.4	3.6	9	2	2	4	2.5	2.5	5	18
E704	Ghanekar Abhay Jayawant	2.4	1.6	4	0.5	0.5	1	1.5	1.5	3	8
E705	Lohar Shivani Sambhaji	5.4	3.6	9	1	1	2	1	1	2	13
E706	Palande Shreya Ajit	6	4	10	1.5	1.5	3	2.5	2.5	5	18
E707	Pawaskar Bhushan Bhagyavan	4.2	2.8	7	0.5	0.5	1	1.5	1.5	3	11
E708	Shigwan Akanksha Vijay	5.4	3.6	9	1.5	1.5	3	0.5	0.5	1	13
E709	Devalekar Shraddha Sadanand	4.2	2.8	7	1	1	2	2	2	4	13
E710	Wadkar Affan Riyaz	5.4	3.6	9	1.5	1.5	3	2.5	2.5	5	17
E711	Kolge Tushar Santosh	3.6	2.4	6	2	2	4	1	1	2	12
E712	Burondkar Sanket Pandurang	3.6	2.4	6	1	1	2	0	0	0	8
E713	Pawar Darshita S.	0.6	0.4	1	0	0	0	0	0	0	1
E714	Tharval Anuj Sandip	6	4	10	2.5	2.5	5	0	0	0	15
E715	Khandagale Tanvi Tukaram	2.4	1.6	4	0	0	0	0.5	0.5	1	5
E716	Sawant Saurabh Rajendra	4.8	3.2	8	0.5	0.5	1	0	0	0	9
E717	Kalambate Pratik Pramod	4.2	2.8	7	0.5	0.5	1	0	0	0	8
E718	Juwale Akshay Ramchandar	4.8	3.2	8	1	1	2	0.5	0.5	1	11
E719	Shirke Sharvari Shyam	6	4	10	2	2	4	1.5	1.5	3	17
E720	Bhosale Atul Sanjay	3	2	5	2.5	2.5	5	1.5	1.5	3	13
E721	Sarafdar Vinit S	5.4	3.6	9	2.5	2.5	5	1	1	2	16
E722	Thorat Abhishek V	5.4	3.6	9	2	2	4	1.5	1.5	3	16
E723	Kutekar Omkar V	3.6	2.4	6	1.5	1.5	3	0	0	0	9
E724	Shirkar Tanay Vijay	6	4	10	2	2	4	1.5	1.5	3	17
E725	Solkar Prathamesh B	4.2	2.8	7	1.5	1.5	3	2.5	2.5	5	15
E726	Prasade Devendra Sharad	4.8	3.2	8	0	0	0	0	0	0	8
E727	Harachkar Sudesh Bhikaji	5.4	3.6	9	2.5	2.5	5	2	2	4	18
E728	Shigawan Priyanka Vijay	2.4	1.6	4	0	0	0	2	2	4	8
E729	Warang Prathmesh	6	4	10	2.5	2.5	5	2	2	4	19
E730	Bhojane Akshay S	4.2	2.8	7	0.5	0.5	1	0	0	0	8

Roll No.	Name of Students	CO1 Attainment	% CO1 Attainment	CO1 Attainment status	CO2 Attainment	% CO32Attainment	CO2 Attainment status
E701	Balkate Prathmesh Prakash	5.5	50	CO1	4.5	50	CO2
E702	Chaughule Nikhil Deepak	7.8	71	CO1	6.2	69	CO2
E703	Chougale Waseem Mubarak	9.9	90	CO1	8.1	90	CO2
E704	Ghanekar Abhay Jayawant	4.4	40	CO1	3.6	40	CO2
E705	Lohar Shivani Sambhaji	7.4	67	CO1	5.6	62	CO2
E706	Palande Shreya Ajit	10	91	CO1	8	89	CO2
E707	Pawaskar Bhushan Bhagyavan	6.2	56	CO1	4.8	53	CO2
E708	Shigwan Akanksha Vijay	7.4	67	CO1	5.6	62	CO2
E709	Devalekar Shraddha Sadanand	7.2	65	CO1	5.8	64	CO2
E710	Wadkar Affan Riyaz	9.4	85	CO1	7.6	84	CO2
E711	Kolge Tushar Santosh	6.6	60	CO1	5.4	60	CO2
E712	Burondkar Sanket Pandurang	4.6	42	CO1	3.4	38	CO2
E713	Pawar Darshita S.	0.6	5	CO1	0.4	4	CO2
E714	Tharval Anuj Sandip	8.5	77	CO1	6.5	72	CO2
E715	Khandagale Tanvi Tukaram	2.9	26	CO1	2.1	23	CO2
E716	Sawant Saurabh Rajendra	5.3	48	CO1	3.7	41	CO2
E717	Kalambate Pratik Pramod	4.7	43	CO1	3.3	37	CO2
E718	Juwale Akshay Ramchandar	6.3	57	CO1	4.7	52	CO2
E719	Shirke Sharvari Shyam	9.5	86	CO1	7.5	83	CO2
E720	Bhosale Atul Sanjay	7	64	CO1	6	67	CO2
E721	Sarafdar Vinit S	8.9	81	CO1	7.1	79	CO2
E722	Thorat Abhishek V	8.9	81	CO1	7.1	79	CO2
E723	Kutekar Omkar V	5.1	46	CO1	3.9	43	CO2
E724	Shirkar Tanay Vijay	9.5	86	CO1	7.5	83	CO2
E725	Solkar Prathamesh B	8.2	75	CO1	6.8	76	CO2
E726	Prasade Devendra Sharad	4.8	44	CO1	3.2	36	CO2
E727	Harachkar Sudesh Bhikaji	9.9	90	CO1	8.1	90	CO2
E728	Shigawan Priyanka Vijay	4.4	40	CO1	3.6	40	CO2
E729	Warang Prathmesh	10.5	95	CO1	8.5	94	CO2
E730	Bhojane Akshay S	4.7	43	CO1	3.3	37	CO2
	Total COs Attainment	206.1			161.9		
	Avgrage COs Attainment	6.87			5.40		
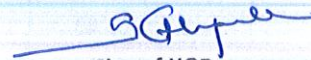
Cos Attainment	CO1	% CO1	CO2	%CO2
Total number of Students meeting requirements	20	66.67	20	66.67
Total number of Students not meeting requirements	10	33.33	10	33.33
Total Students	30		30	

% is greater than or equal to 60%	YES	YES

Sign of Subject Teacher

Sign of HOD

Academic Year: 2018-19
Class:TE Electrical sem:VI

Subject :- Protection and Switch gear Engineering
Name of Faculty   Ms. Priti Sathe

Program Outcomes(Pos)	
Engineering Graduates will 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, and environmental considerations.
PO4	**Conduct investigations of complex problems:** 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.
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 practice.
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 the 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:** 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 effective presentations, and give and receive clear instructions.
PO11	**Project management and finance:** Demonstrate knowledge and understanding of the 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 environments.
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.

Cos and Pos Mapping

Academic Year: 2018-19 **Subject:** Protection and Switch gear Engineering
Class:TE Electrical sem:VI **Name of Faculty:** Ms. Priti Sathe

Course Outcomes(Cos)	
Upon successful completion of this course, the students will able to:	
CO1	To select the appropriate switching/protecting device for substation
CO2	To discriminate between apllication of circuit breakers and fuses as protective device
CO3	To understand basic concepts of relay,types of relay and their application in power system
C04	To select specific protection required fir different components of power system according to the types of fault
CO5	To apply specific protection provided for different types of transmission lines

CO	Program Outcomes to CO Mapping										
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO10	PO11	PO12
1		✓	✓		✓	✓					
2		✓	✓			✓					
3	✓	✓			✓		✓				
4		✓	✓	✓		✓					
5	✓	✓	✓		✓	✓	✓				

CO	Program Outcomes to CO Weightage										
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO10	PO11	PO12
1			3		3	2					
2			2	2		2					
3	3	2			2		3				
4		2	2	2		3					
5	2	2	1		2	3	1				

3 : Substantial (High/Strong) 2: Moderate (Medium) 1: Slight (Low/Poor)

Sign of Subject Teacher

Sign of HOD

Maharshi Parshuram College of Engineering, Velneshwar, Ratnagiri
Department of Electrical Engineering
Attainment of Cos

Academic Year: 2018-19
Class:TE Electrical sem:VI

Subject: Protection and Switch gear Engineering
Name of Faculty: Ms. Priti Sathe

Measuring CO's attainment through Internal Assessment - I

Roll No.	Name of Students	Q1 Total 10	Q2 Total 5	Q3 Total 5	Total 20
E701	Bhosale Vivek Pandurang	10	4	5	19
E702	Bhuvad Sudhir Gajanan	10	5	5	20
E703	Chodankar Bhagyaraj Babali	6	5	5	16
E704	Deshamukh Monika Narayan	10	5	5	20
E705	Farakte Bhushan Suresh	7	4	3	14
E706	Fopete Bhavesh Ratnakar	9	4	5	18
E707	Ghodke Santosh Dnyanoba	7	4	5	16
E708	Gorule Amol Manoher	9	5	5	19
E709	Humbare Digambar Vasant	10	4	5	19
E710	Jadhav Sahil Shantaram	10	4	3	17
E711	Joshi Mayuri Ashok	9	5	5	19
E712	Khedekar Aniruddha Anil	6	4	5	15
E713	Khedekar Tejaharsh Jatish	7	4	4	15
E714	Kulye Sarvesh Santosh	10	4	5	19
E715	More Sonali Tukaram	10	4	5	19
E716	Nachankar Sayali Deepak	10	5	5	20
E717	Nakhawa Durvesh Deepak	10	5	5	20
E718	Narvekar Shubham S	10	4	5	19
E719	Pandey Shailendra Kamlesh	9	4	5	18
E720	Pardeshi Nitin Machindra	5	3	5	13
E721	Pashilkar Rani Rajaram	10	3	5	18
E722	Pawar Sayali Siddharth	10	5	5	20
E723	Pawar Sonal Ashok	10	4	5	19
E724	Repal Akshay Deepak	10	5	5	20
E725	Salgaonkar Rahul Rajendra	10	5	5	20
E726	Salunke Siddhesh Maruti	9	5	4	18
E727	Salunke Rahul Mangesh	10	5	5	20

Roll No.	Name				
E728	Sansare Sangram Mangesh	8	4	5	17
E729	Tetambe Snehal Ramesh	10	4	5	19
E730	Tisulkar Poojan Pramod	6	4	5	15

Ques.	Course Outcomes	
	CO1	CO2
Q1	100%	0%
Q2	0%	100%
Q3	100%	0%

CO	Maximum Marks of Cos for Q1	Maximum Marks of Cos for Q2	Maximum Marks of Cos for Q3	Total Cos Marks
CO1	10	0	5	15
CO2	0	5	0	5

Roll No.	Name of Students	Q1		Total	Q2		Total	Q3		Total	Grand Total
		CO1	CO2		CO1	CO2		CO1	CO2		
E701	Bhosale Vivek Pandurang	10	0	10	0	4	4	5	0	5	19
E702	Bhuvad Sudhir Gajanan	10	0	10	0	5	5	5	0	5	20
E703	Chodankar Bhagyaraj Babali	6	0	6	0	5	5	5	0	5	16
E704	Deshamukh Monika Narayan	10	0	10	0	5	5	5	0	5	20
E705	Farakte Bhushan Suresh	7	0	7	0	4	4	3	0	3	14
E706	Ghodake Santosh Dnyanoba	9	0	9	0	4	4	5	0	5	18
E707	Humbare Digambar Vasant	7	0	7	0	4	4	5	0	5	16
E708	Jadhav Sahil Shantaram	9	0	9	0	5	5	5	0	5	19
E709	Joshi Mayuri Ashok	10	0	10	0	4	4	5	0	5	19
E710	Khedekar Aniruddha Anil	10	0	10	0	4	4	3	0	3	17
E711	Khedekar Tejaharsh Jatish	9	0	9	0	5	5	5	0	5	19
E712	Kulye Sarvesh Santosh	6	0	6	0	4	4	5	0	5	15
E713	More Sonali Tukaram	7	0	7	0	4	4	4	0	4	15
E714	Nachankar Sayali Deepak	10	0	10	0	4	4	5	0	5	19
E715	Nakhawa Durvesh Deepak	10	0	10	0	4	4	5	0	5	19
E716	Pandey Shailendra Kamlesh	10	0	10	0	5	5	5	0	5	20
E717	Pardeshi Nitin Machindra	10	0	10	0	5	5	5	0	5	20
E718	Pashilkar Rani Rajaram	10	0	10	0	4	4	5	0	5	19
E719	Pawar Sayali Siddharth	9	0	9	0	4	4	5	0	5	18
E720	Pawar Sonal Ashok	5	0	5	0	3	3	5	0	5	13

E721	Repal Akshay Dipak	10	0	10	0	3	3	5	0	5	18
E722	Salgaonkar Rahul Rajendra	10	0	10	0	5	5	5	0	5	20
E723	Salunke Siddhesh Maruti	10	0	10	0	4	4	5	0	5	19
E724	Salunkhe Rahul Mangesh	10	0	10	0	5	5	5	0	5	20
E725	Sansare Sangram Mangesh	10	0	10	0	5	5	5	0	5	20
E726	Tetambe Snehal Ramesh	9	0	9	0	5	5	4	0	4	18
E727	Tisulkar Poojan Pramod	10	0	10	0	5	5	5	0	5	20
E728	Narvekar Shubham S	8	0	8	0	4	4	5	0	5	17
E729	Gorule Amol Manohar	10	0	10	0	4	4	5	0	5	19
E730	Fopete Bhavesh Ratnakar	6	0	6	0	4	4	5	0	5	15

Roll No.	Name of Students	CO1 Attainment	% CO1 Attainment	CO1 Attainment status	CO2 Attainment	% CO2 Attainment	CO1 Attainment status
E701	Bhosale Vivek Pandurang	15	100	CO1	4	80	CO2 ATTAINED
E702	Bhuvad Sudhir Gajanan	15	100	CO1	5	100	CO2 ATTAINED
E703	Chodankar Bhagyaraj Babali	11	73	CO1	5	100	CO2 ATTAINED
E704	Deshamukh Monika Narayan	15	100	CO1	5	100	CO2 ATTAINED
E705	Farakte Bhushan Suresh	10	67	CO1	4	80	CO2 ATTAINED
E706	Ghodake Santosh Dnyanoba	14	93	CO1	4	80	CO2 ATTAINED
E707	Humbare Digambar Vasant	12	80	CO1	4	80	CO2 ATTAINED
E708	Jadhav Sahil Shantaram	14	93	CO1	5	100	CO2 ATTAINED
E709	Joshi Mayuri Ashok	15	100	CO1	4	80	CO2 ATTAINED
E710	Khedekar Aniruddha Anil	13	87	CO1	4	80	CO2 ATTAINED
E711	Khedekar Tejaharsh Jatish	14	93	CO1	5	100	CO2 ATTAINED
E712	Kulye Sarvesh Santosh	11	73	CO1	4	80	CO2 ATTAINED
E713	More Sonali Tukaram	11	73	CO1	4	80	CO2 ATTAINED
E714	Nachankar Sayali Deepak	15	100	CO1	4	80	CO2 ATTAINED
E715	Nakhawa Durvesh Deepak	15	100	CO1	4	80	CO2 ATTAINED
E716	Pandey Shailendra Kamlesh	15	100	CO1	5	100	CO2 ATTAINED
E717	Pardeshi Nitin Machindra	15	100	CO1	5	100	CO2 ATTAINED
E718	Pashilkar Rani Rajaram	15	100	CO1	4	80	CO2 ATTAINED
E719	Pawar Sayali Siddharth	14	93	CO1	4	80	CO2 ATTAINED

E720	Pawar Sonal Ashok	10	67	CO1	3	60	CO2 ATTAINED
E721	Repal Akshay Dipak	15	100	CO1	3	60	CO2 ATTAINED
E722	Salgaonkar Rahul Rajendra	15	100	CO1	5	100	CO2 ATTAINED
E723	Salunke Siddhesh Maruti	15	100	CO1	4	80	CO2 ATTAINED
E724	Salunkhe Rahul Mangesh	15	100	CO1	5	100	CO2 ATTAINED
E725	Sansare Sangram Mangesh	15	100	CO1	5	100	CO2 ATTAINED
E726	Tetambe Snehal Ramesh	13	87	CO1	5	100	CO2 ATTAINED
E727	Tisulkar Poojan Pramod	15	100	CO1	5	100	CO2 ATTAINED
E728	Narvekar Shubham S	13	87	CO1	4	80	CO2 ATTAINED
E729	Gorule Amol Manohar	15	100	CO1	4	80	CO2 ATTAINED
E730	Fopete Bhavesh Ratnakar	11	73	CO1	4	80	CO2 ATTAINED
Total COs Attainment		411			130		
Avgrage COs Attainment		13.7			4.33333		

Cos Attainment	CO1	% CO1	CO2	%CO2
Total number of Students meeting requirements	30	100	30	100
Total number of Students not meeting requirements	0		0	
Total Students	30		0	

% is greater than or equal to 60%	YES	YES

Sign of Subject Teacher

Sign of HOD