

Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, December 2019			
Course: Process Optimization		Semester: III	
Program: M.Tech. – Energy System		Time : 03 hrs.	
Course Code: EPEC7014		Max. Marks: 100	
Instructions: All questions are to be attended			
SECTION A			
#		Marks	CO
Q 1	The 3Ts affect the combustion. Please explain	4	CO1
Q 2	Briefly explain about electrical harmonics and problems caused by these.	4	CO1
Q 3	Write down the procedure for developing an optimized system using Pinch Technology.	4	CO3
Q 4	Describe the advantages of improving Power Factor	4	CO1
Q 5	Explain the affinity laws and application for energy saving in rotary machines	4	CO1
SECTION B			
Q 6	Explain the Energy Conservation opportunities in a commercial building	10	CO4
Q 7	Elaborate the Energy Conservation opportunities in an Electrical power distribution network	10	CO1
Q 8	Describe the key purpose of using Pinch Technology. Also describe the role of Composite curve for same.	10	CO3
Q 9	Explain the techniques for energy consumption reduction in a steel plant	10	CO4
SECTION-C			
Q 10	Describe the significance of material & Energy balance diagram. Draw a M-E diagram for a typical Boiler plant system	20	CO2
Q 11	Discuss in detail the Energy optimization techniques with a Steel manufacturing plant	20	CO5
OR			
	Discuss in details the Energy optimization techniques with a Cement Manufacturing plant		