Kadi Sarva Vishwavidyalaya.

ME (Sem-I) (Electrical)

Economics of Power System

Date: 23/01/2013 **Max. Mark: 70**

Time: 3 Hrs

Instructions:

1. Answer each section in separate Answersheet.
2. Assume suitable data wherever it is necessary.
3. Use of Scientific Calculator is permitted.

		Section-I	
Q-1	**[A]**	Explain probabilistic cost computation.	**[05]**
	[B]	Explain any five system constraints in economic operation of power system with its mathematical expressions and its theoretical relevance.	**[05]**
	[C]	Describe thermal economic dispatch using newton method.	**[05]**
		OR	
	[C]	Using piecewise linear cost functions, explain thermal economic dispatch.	**[05]**
Q-2	**[A]**	Explain scheduling energy.	**[05]**
	[B]	Discuss short term hydrothermal scheduling problem using gradient approach.	**[05]**
		OR	
Q-2	**[A]**	How can the hydro scheduling problem be solved using linear programming?	**[05]**
	[B]	Explain how dynamic programming is applied to the solution of the hydrothermal scheduling problem.	**[05]**
Q-3	**[A]**	Explain any one method of solving unit commitment problem.	**[05]**
	[B]	Explain operation of managed spot market and its importance in the current scenario.	**[05]**
		OR	
Q-3	**[A]**	Explain system constraints with respect to unit commitment problem.	**[05]**
	[B]	What are the different types of market? Explain any one in detail with a suitable example.	**[05]**
		Section-II	
Q-4		**Each Carries equal marks.**	**[15]**
	[A]	Discuss the components of ABT and its procedure for scheduling.	
	[B]	Discuss the advancements in ABT as compared to the past tariffs.	
	[C]	Explain the following terms with respect to ABT: metering, energy accounting operation, pool accounting operation, UI cost and marginal cost.	
		OR	
	[C]	Compare pool trading and bilateral trading.	

Q-5	[A]	Explain the importance of economic load dispatch in power generation.	[05]
	[B]	Describe the different types of scheduling problem.	[05]
		OR	
Q-5	[A]	Describe thermal economic dispatch by gradient search method.	[05]
	[B[	Explain the algorithm of lambda iteration method using flow chart.	[05]
Q-6	[A]	Explain expected cost method.	[05]
	[B]	What is the grid system? Explain some adverse grid conditions and also give causes of grid collapse.	[05]
		OR	
Q-6	[A]	Explain base point and participation factors.	[05]
	[B]	Compare unit commitment with economic dispatch of power system.	[05]