Enrollment No: _____ Exam Seat No:_____

C. U. SHAH UNIVERSITY

Winter Examination-2019

Subject Name : Inter Connected Power System

Subject Code : 4TE07ICP1 **Branch: B.Tech (Electrical)**

Semester : 7 **Date : 18/11/2019** **Time : 10:30 To 01:30** **Marks : 70**

Instructions:

(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1 **Attempt the following questions:** **(14)**

a) The incremental fuel cost (dci/dPgi) is useful for calculation of plant output.The above statement is True/False. (Select the proper option)
b) State the name of any two thermal power plant located in Gujarat.
c) Black out means _____. (Total Power Failure/ Dark time maintenance)
d) Cascaded tripping means one generating station will force the other generating station to shut down because the load demand can not be matched by all the generating station in operation.
(The above statement is True/False)
e) Islanding means the generating stations is _____. (separated from the system, located on the island)
f) The Lagrangian multiplier is a term related to co-ordination equation. The above statement is True/False. (Select the proper option)
g) For inter state power transfer the critical parameter for monitoring is _____.(Frequency/Voltage)
h) If a Patton's security function value is less than MTIL then unit schedule is ----------(modified/unchanged.)
i) The Lagrangian multiplier for each generating unit Should be ___.(Same/Different)
j) State the location of any two solar power plant in Gujarat.
k) In the CONTROL AREA All the generators speed up and slow down together. The above statement is True/False. (Select correct option)
l) Name the location of 400 kV substation in Surendranagar District.
m) The penalty factor account for the losses of the transmission line when economical dispatch of the generating unit is to be considered.The above statement is(true/false).
n) State the location of any two hydro plant located in Gujarat.

Attempt any four questions from Q-2 to Q-8

Q-2		**Attempt all questions**	**(14)**
	(a)	Draw grid arrangements of India as per hi-Archie and Explain function of each block.	**(7)**
	(b)	Briefly classify power generating capacity of Gujarat State and India as a whole.	**(7)**
Q-3		**Attempt all questions**	**(14)**
	(a)	What do you mean by cascaded tripping. Explain with suitable example.	**(7)**
	(b)	State the function of load dispatch centre.	**(7)**
Q-4		**Attempt all questions**	**(14)**
	(a)	What are the different constraints in economic load dispatch.	
	(b)	Explain Lagrangian Multiplier method to solve the economic load dispatch problem without transmission losses.	
Q-5		**Attempt all questions**	**(14)**
	(a)	What is Patton's Security function? Explain its importance.	**(7)**
	(b)	Briefly write the steps of computer solution for optimum loading of generator.	**(7)**
Q-6		**Attempt all questions**	**(14)**
	(a)	A 100 MVA Synchronous generator operates on full load at a frequency of 50 Hz . The load is suddenly reduced to 50 MW. Due to time lag in governor system , the steam valve begins to close after 0.4 second. Determine the change in frequency that occurs during this time. H=5 Kw-sec /kVA of generating capacity.	
	(b)	What are the different constraints in economic load dispatch.	
Q-7		Attempt all questions	**(14)**
	(a)	Explain Islanding with neat diagram.	
	(b)	Briefly explain the Automatic voltage control with neat sketch.	
Q-8		**Attempt all questions**	**(14)**
	(a)	Draw the neat sketch of turbine speed governing system.	**(7)**
	(b)	Briefly explain PI control with neat diagram and sketches for power system regulation.	**(7)**