Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name : Inter Connected Power System

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

Semester : 7 **Date : 26/03/2018** **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) Write the full form of ABT.
b) Write the full form of PGVCL.
c) State any two advantages of inter connected power system.
d) State the power generation capacity of any two hydro power station in Gujarat.
e) State the location of any two thermal power stations in Gujarat.
f) State the location of national load dispatch centre.
g) State the location of any two regional load dispatch centre in Gujarat.
h) State the location of any two 400 kV substation in Gujarat.
i) State the equation of incremental fuel cost.
j) What is meant by control area?
k) With the role of Load Dispatch Centre the frequency is collectively controlled. The above statement is True/False. (Select correct option)
l) What is the meaning of Black Out?
m) The fastest control action is obtained by the governor mechanism. The above statement is True/False. (Select Correct Option)
n) Write the full form of CEA.

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

Q-2 **Attempt all questions** **(14)**
(A) State the function of load dispatch centre. **(7)**
(B) Briefly explain the cost curve of the typical generator. **(7)**

Q-3 **Attempt all questions** **(14)**
(A) Incremental fuel costs in rupees per MWh for a plant consisting of two units are **(14)**

$dC2/dPG2 = 0.20\ PG2 + 40$; $dC1/dPG1 = 0.25PG1 + 30$.

Assume that both units are operating at all times, and total load varies from 40

MW to 250 MW, and the maximum and minimum loads on each unit are to be 125 and 20 MW, respectively. How will the load be shared between the two units as the system load varies over the full range? What are the corresponding values of the plant incremental costs?

Q-4	**Attempt all questions**	**(14)**
(A)	Briefly describe the dynamic programming method for unit commitment.	**(7)**
(B)	Briefly write the steps of computer solution for optimum loading of generator.	**(7)**
Q-5	**Attempt all questions**	**(14)**
(A)	Briefly write the Patton's Security function. Explain its importance	**(7)**
(B)	Derive the co-ordination equation of loss less transmission line when n no of generators are connected in the system.	**(7)**
Q-6	**Attempt all questions**	**(14)**
(A)	Draw the neat sketch of turbine speed governing system	**(7)**
(B)	Derive the mathematical model of generator for automatic generation concept.	**(7)**
Q-7	**Attempt all questions**	**(14)**
(A)	Define the penalty factor and derive exact co-ordination equation.	**(7)**
(B)	Enlist the issues related to design of islanding.	**(7)**
Q-8	**Attempt all questions**	**(14)**
(A)	Briefly state the philosophy of regional grid operation.	**(7)**
(B)	Briefly state the factors responsible for cascaded tripping.	**(7)**