[Total No. of Printed Pages:1] **CODE NO:- Z-8034**

FACULTY OF ENGINEERING

M.E (EPS) Year Examination - June – 2015

Power System Planning And Economic Operation

(Revised)

[Time: Three *Hours*] **[Max. Marks: 80]**

"Please check whether you have got the right question paper."

i) Solve any two questions from each section.

ii) Assume suitable data wherever necessary.

SECTION-A

Q.1 a) Explain different tools used in power planning.s 10

b) Write and explain the simulation programs for system planning. 10

Q.2 a) Discuss the classification and characteristics of loads. 10

b) Explain in detail spatial forecasting 10

Q.3 a) What are the reforms to power structure in planning , explain. 10

b) Draw and explain the planning organization. 10

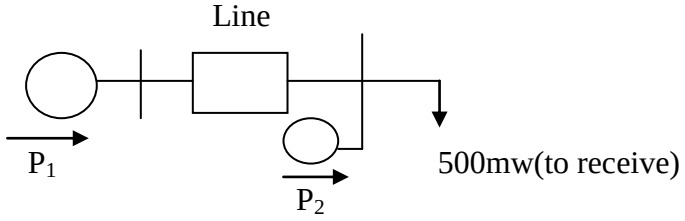
SECTION –B

Q.4 a) Explain with neat diagram an automatic voltage regulator of a generator. 10

b) Discuss the load frequency control with generation rate constraints illustrate with the help of model. 10

Q.5 a) Deduce the expression for transmission loss and its coefficients. 10

b) The losses in the lines shown in figure1 are proportional to the square of the power flow. both units are loaded at 250mw. Due to transmissions loss 12.5mw of power is lost. where should the extra 12.5mw be generated for economic operation? Attempt a rescheduling to minimise the transmission loss 10



Line loss = 0.0002 P_1^2w

$P_1 \begin{bmatrix} min & = & 7mw \\ max & = & 400mw \end{bmatrix}$ $P_2 \begin{bmatrix} min & = & 70mw \\ max & = & 400mw \end{bmatrix}$ $f_1(P_1) = P_2(P_2) = 400+7P+0.002P^2$

Q.6 a) Explain the distributed reactive power compensation by using pi networks 10

b) Explain in brief the indian electricity rules, 1956. 10