Exp - 05	Determination of Receiving End Parameters

Aim:

      To compute the receiving end parameters of a transmission line by using Nominal Pi and Nominal T method.

Apparatus Required:

SI.No	Apparatus	Specification
1	PC	Dual core, RAM 512 MB 1.2 GHz speed, 80 GB
2	MATLAB	7.5

Algorithm:

Step 1: Get the sending end voltage, Power, frequency, power factor and transmission line parameters.

Step 2: Convert the all the line parameters to Phase values.

Step 3: Choose any one methodology to determine the receiving end parameters.

      Case 1. Nominal PI
      Case 2. Nominal T

Step 4: Compute the ABCD Parameters by using the formulae.

Step 5: Compute the Receiving end Parameters value by

$$\begin{bmatrix} V_{r\,phase} \\ I_r \end{bmatrix} = \begin{bmatrix} A & B \\ C & D \end{bmatrix}^{-1} \begin{bmatrix} V_{s,\,phase} \\ I_S \end{bmatrix}$$

Step 5: Compute the power factor at receiving end.

Step 6: Stop the execution.

Program:

```
%// Determination of Receiving End Voltage , Current and Power Factor.///
clear all;
Z=input('Enter the Series Impedance Value of the Transmission Line=');
Y=input('Enter the Shunt Admittance Value of the Transmission Line=');
Vsline=input('Enter the Sending End Line Voltage=');
Ps=input('Enter the Sending End Power=');
PFsend=input('Power Factor At Sending End=');
Case=menu('Type of Problem','Nominal PI','Nominal T');
Vsphase=Vsline/sqrt(3);
Is=Ps/(sqrt(3)*Vsline);
Is=Is.*exp(i*PFsend);
if Case==1
```

```matlab
    A=1+Z*Y/2;
    B=Z;
    C=Y+Y^2*Z/4;
    D=A;
    ABCD=[A B;C D];
elseif Case==2
    A=1+ZY/2;
    B=Z;
    C=Y+Y^2*Z/4;
    D=A;
    ABCD=[A B;C D];
end
RED=ABCD'*[Vsphase; Is];
Vrphase=RED(1);
Ir=RED(2);
Vrline=sqrt(3)*Vrphase;
PFreceiv=cosd(angle(Vrline)-angle(Ir));
ABCD
Vrline
Ir
PFreceiv
```

Result: