JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY
Electronics and Communication Engineering
Electrical Science-1 (15B11EC111)
Tutorial Sheet: 7

Q1. [CO2] Obtain the Thevenin's equivalent circuit at terminals a and b of the circuit as shown in Fig. 1.

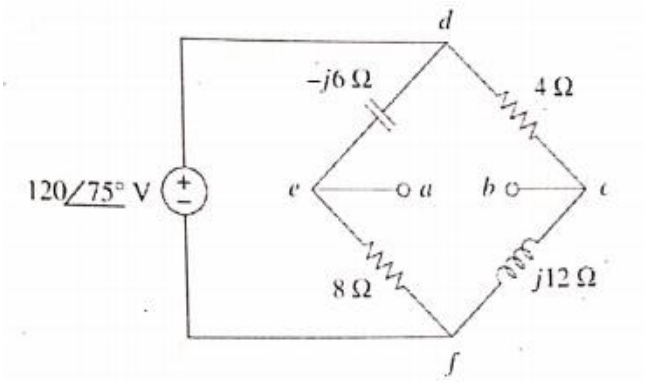

Fig. 1

Q2. [CO2] Find the Thevenin's equivalent circuit as seen from terminals a and b for the circuit shown in Fig. 2.

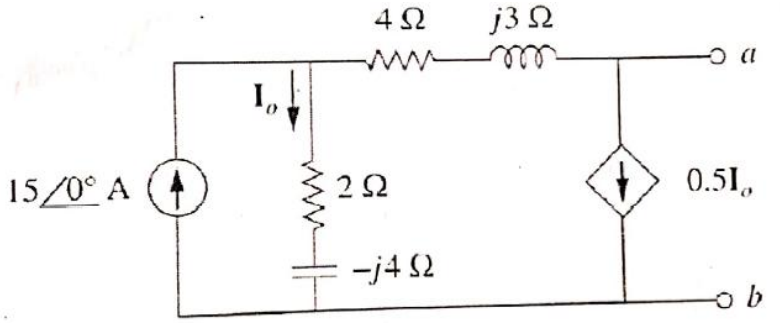

Fig. 2

Q3. [CO2] Obtain current Io in the circuit of Fig. 3 using Norton's theorem.

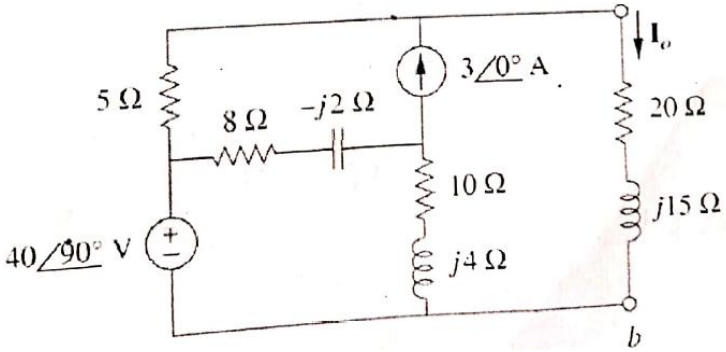

Fig. 3

Q.4 [CO2] Find the Thevenin's equivalent of the circuit in Fig. 4 across a and b terminals.

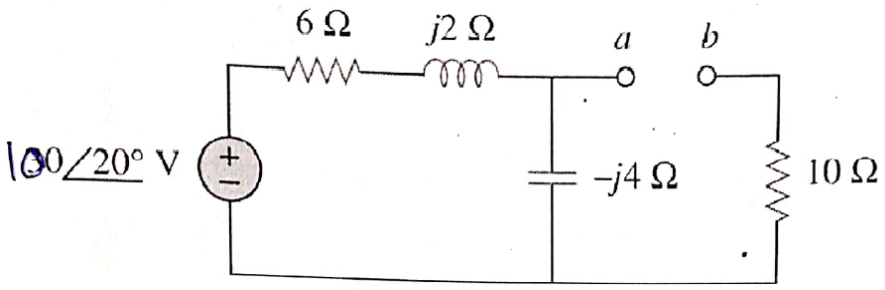

Fig. 4

Q.5 [CO2] Find the Thevenin's and Norton's equivalent across a and b for the circuit with dependent source as shown in Fig. 5.

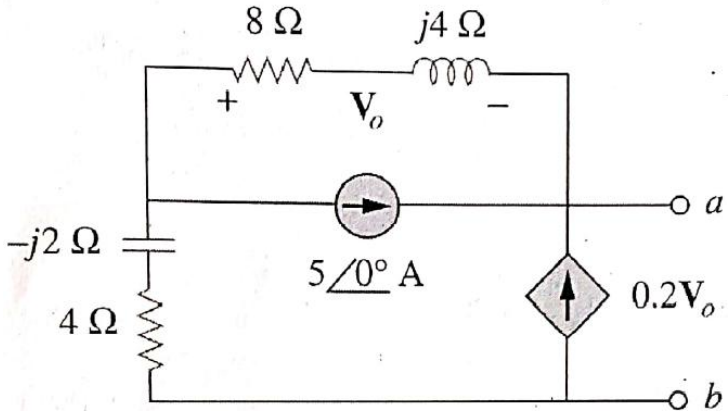

Fig. 5

Q.6 [CO2] Calculate the power factor seen by the source and the average power supplied by the source in the circuit of Fig. 6.

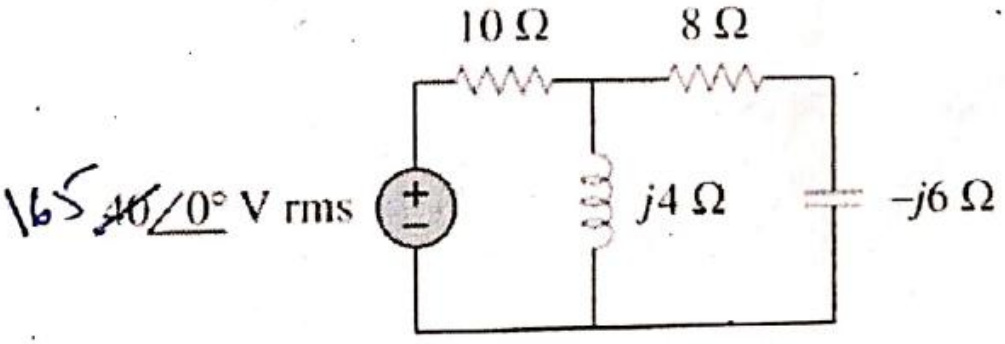

Fig. 6

Q.7 [CO2] The 60Ω resistor in circuit of Fig. 7 absorbs 240 Watt of average power. Calculate V and the complex power of each branch. What is the total complex power?

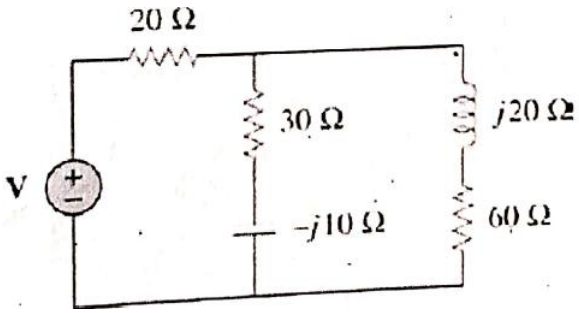

Fig. 7

Q.8 [CO2] Two loads are connected in parallel in the circuit of Fig. 8. The Load 1 has 2KW, pf=0.75 loading and Load 2 has 4KW, pf=0.95 lagging. Calculate the pf of two loads and complex power supplied by the source.

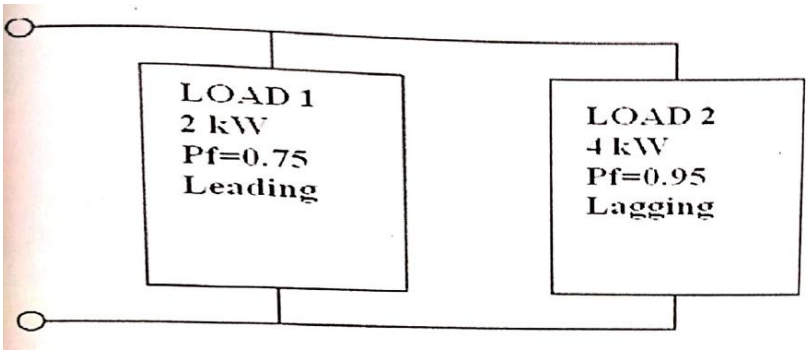

Fig. 8

Q.9 [CO2] Find the value of the load impedance in the circuit of Fig. 9, for which it would absorbs the maximum average power .

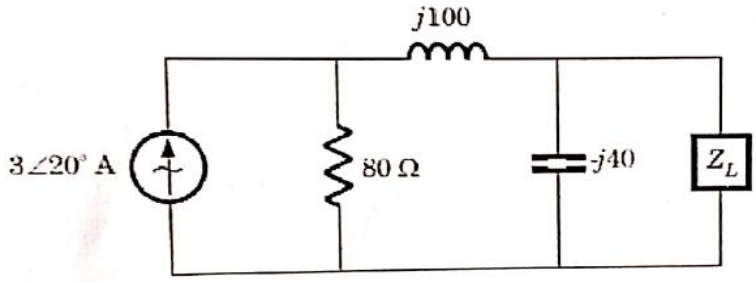

Fig. 9

Q.10 [CO2] In the circuit of Fig. 10, find the maximum power absorbed by Z_L.

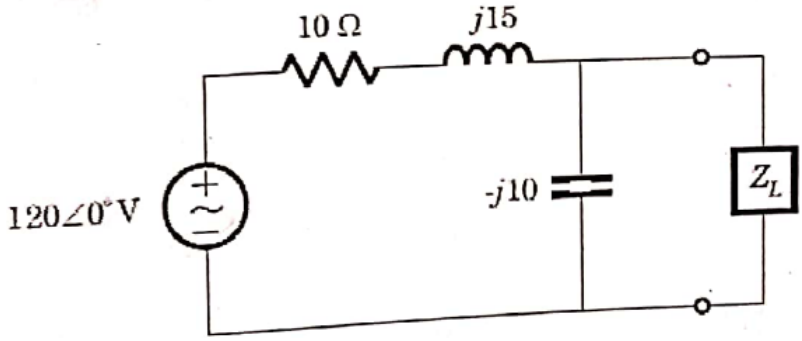

Fig. 10