(DEC 212)

B. Tech. DEGREE EXAMINATION, MAY - 2015

(Examination at the end of Second Year)

ELECTRONICS & COMMUNICATIONS

Paper - II : Circuit Theory

Time : 3 Hours **Maximum Marks : 75**

Answer question No.1 compulsory ***(10 × 1½ = 15)***

Answer ONE question from each unit ***(4 × 15 = 60)***

1) a) Define ideal Elements.

b) Units of ϕ & G.

c) Define power.

d) Write about KCL.

e) Difference b/w mesh and nodal Analysis

f) Relation b/w power, voltage & Current.

g) State Reciprocity theorem.

h) AVG and RMS value of sinusoidal waveforms.

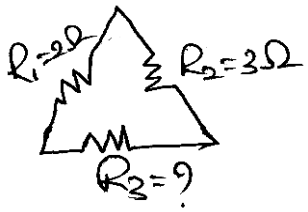
i) Relation b/w Bandwidth and Q – Factor.

j) Advantages of three phase system.

UNIT - I

2) a) Explain about the star to delta & delta to star.

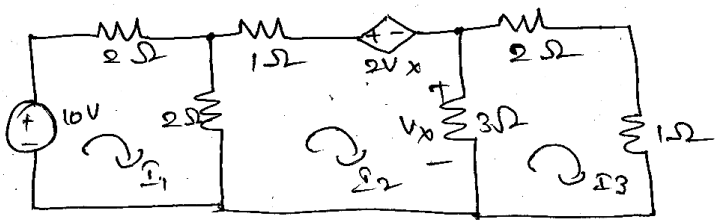
b) Find the R3 value.



OR

3) a) Write about mesh analysis of circuits excited by independent and dependent sources.

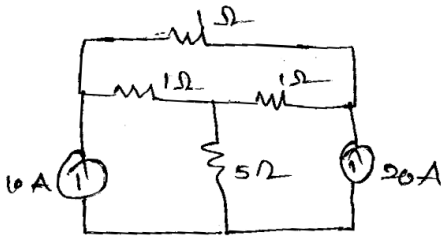
b) Solve the mesh currents of the circuits shown in fig .



UNIT – II

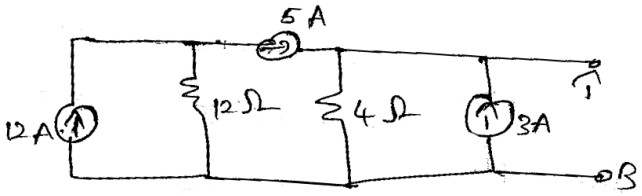
4) a) State and prove the superposition theorem.

b) Find the current in the 5Ω resistor of given fig. using superposition theorem.



OR

5) Determine the Theviniens & Nortons equivalent of the circuits shown in fig. 1 with respect to terminals A & B.



UNIT – III

6) Calculate the response of R, L iC series and parallel. Combination circuits to sinusoidal excitation.

OR

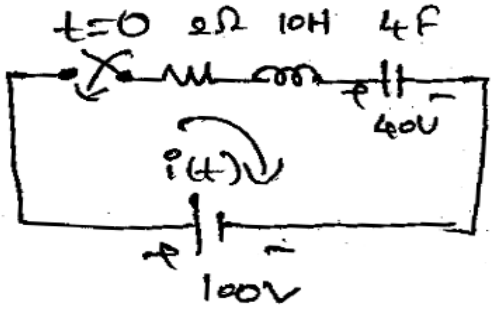
7) Explain about Series Resonance and derive the expression for resonant frequency & quality factor.

UNIT – IV

8) What is poly phase system & Explain its advantages and disadvantages. Explain its operation for 3phase sources and loads.

OR

9) In the RLC circuit of fig. the capacitor has an initial voltage of 40v, when the switch is closed at t = 0. Find an expression for the current i(t)



⌘⌘⌘