Total No. of Questions : 8] *[Total No. of Printed Pages : 4*

Roll No .....

EE/EX-3003 (CBGS)

B.E., III Semester

Examination, December 2017

Choice Based Grading System (CBGS)

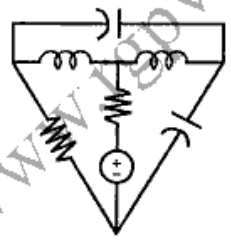
Network Analysis

Time : Three Hours

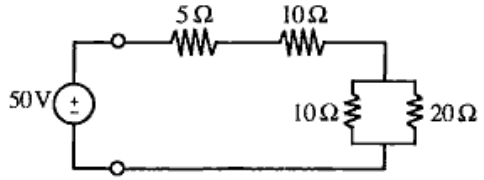
Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.
iii) Assume missing data if any suitably.

1. a) Draw the oriented graph and then write the tie set schedule for the circuit shown in figure.

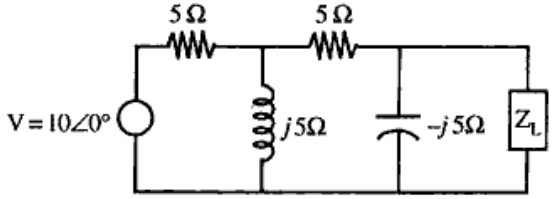


b) Find the current through each element and potential difference across 20Ω register.



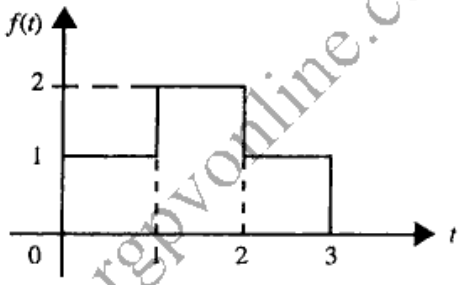
2. a) State and prove maximum power transfer theorem in AC circuit.

b) Find the load impedance Z_L so that maximum power can be transferred to it in the circuit as shown in figure. Also calculate the transfer power.



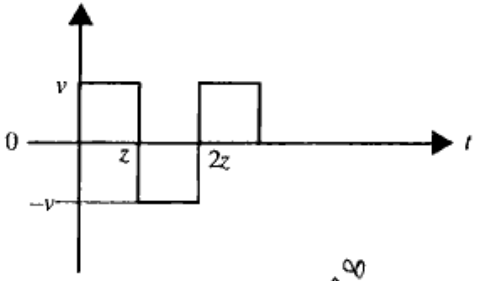
3. a) Define and prove the initial value and final value theorem.

b) Find F(s) for the given circuit:



4. a) What is Dirichlet condition? Explain trigonometric form of Fourier series.

b) A square waveform is shown in following figure obtain the Fourier series.



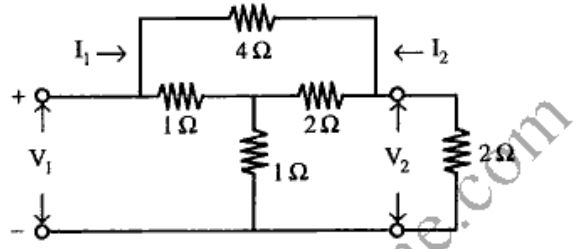
188

5. a) Explain 'Z' parameters and their conversion into 'Y' parameters.

   b) For the resistive bridge-T two port network shown in following figure determine :

   i) G_{12} ii) Z_{12}

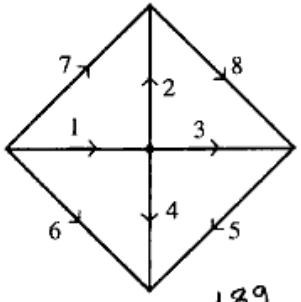
   iii) Y_{12} iv) α_{12}



6. a) Describe any four properties of continuous Time Fourier series.

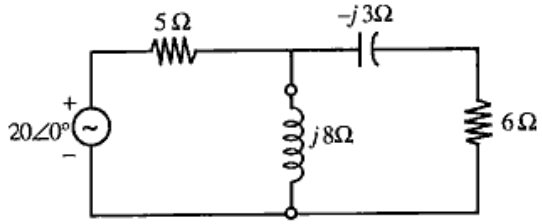
   b) Explain Hybrid parameters and also draw equivalent circuit using h-parameter.

7. a) Make the tie set schedule and write down the corresponding current and voltage equations for the graph shown in figure.



189

   b) Find the voltage and current across inductor by Thevenin's theorem in given circuit.



8. a) Derive the conditions for a network to be symmetrical in terms of two port network parameter sets.

   b) Determine inverse Laplace transform of the following function

$$f(s) = \frac{1}{s^2(s+2)}$$

******

190