

FACULTY OF ENGINEERING

B.E (EEE) IV- Semester (CBCS) (Main) Examination, May / June 2018

Subject: Electrical Circuits-II

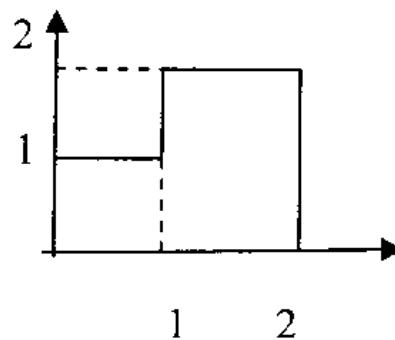
Time: 3 Hours

Max. Marks: 70

Note: Answer All Questions From Part-A, & Any Five Questions From Part-B.

Part-A (20 Marks)

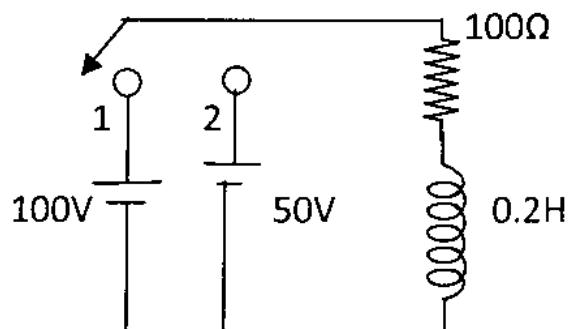
1. List out the symmetry conditions of Fourier series.
2. Bring out an analogy between Laplace Transform & Fourier Transform
3. Determine the Laplace transform of $f(t) = \sin^2 t$
4. Explain in brief the concept of stability form pole zero concept
5. List any two properties of PR functions
6. Draw the equivalent circuit of h parameters
7. Explain the terms oriented graph & tree with an example
8. Find the initial & final value of $F(s) = \frac{9S+10}{S(S+2)}$
9. Find the LT of the following waveform



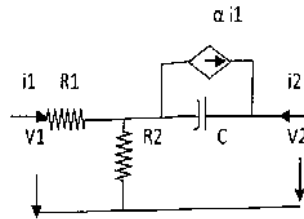
10. Which type of parameters are used for the following combinations
- a) Series
 - b) Parallel
 - c) Cascade

PART-B (50 Marks)

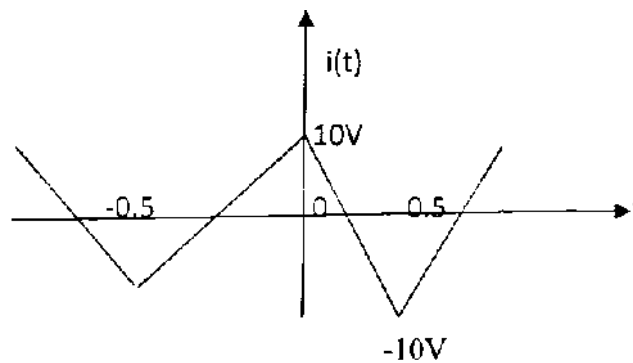
- 11 In the series circuit shown the switch is closed on position 1 at $t=0$ thereby applying the 100V source to the RL branch & at $t=500\mu\text{sec}$ the switch is moved to position 2. Obtain the equations for current in both the intervals & sketch the transient [10M]



12 Find the h parameters for the following network [10M]

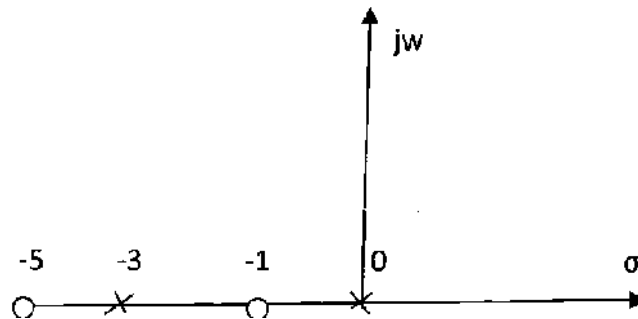


13 The current in an inductance $L=1\text{mH}$ has a waveform as shown in fig. Obtain the trigonometric & exponential series for voltage across inductor [10M]

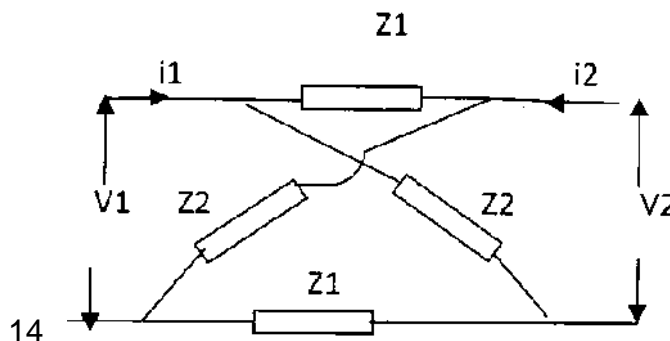


14 Synthesize in two cauer forms $F(s) = [2(s+1)(s+4)] / [(s+2)(s+6)]$ [10M]

15 An impedance function has the following pole zero pattern shown in fig. If $Z(-2) = 3$ Synthesize the impedance in one foster & on cauer form [10M]

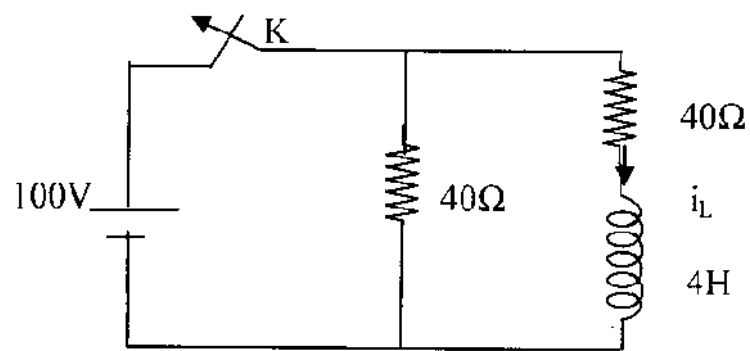


16 a) Determine the Z parameters for the given network [4M]



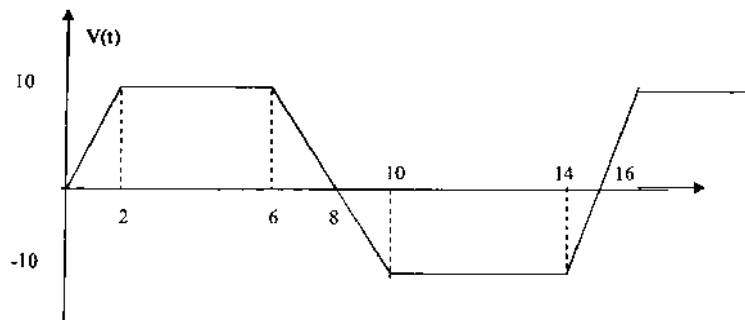
b) In the figure shown below the switch K is opened at $t=0$, steady state reached at $t=0$. Using the LT find $I_L(S)$ & $i_L(t)$. Also find the value of $i_L(t)$ at $t=0.5\text{sec}$ [6M]

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17a) Synthesize the following waveform & find its LT

[5M]



b) Write the tie-set schedule for the network shown & Obtain the equilibrium equation [5M]

