

Code No: 09A40401

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD

B.Tech II Year II Semester Examinations, November / December-2013

PRINCIPLES OF ELECTRICAL ENGINEERING

(Common to ECE, ETM)

Time: 3 hours

Max. Marks: 75

Answer any five questions  
All questions carry equal marks

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- 1.a) Obtain the behaviour and characteristics of an R-L Circuit subjected to unit step excitation and derive the expression of transient current flows in the circuit.
- b) Find  $i(t)$  in the network shown below in figure 1, when the switch K is closed at  $t=0^+$ . A current of 2A was flowing at  $t=0^-$  in the inductor. [15]

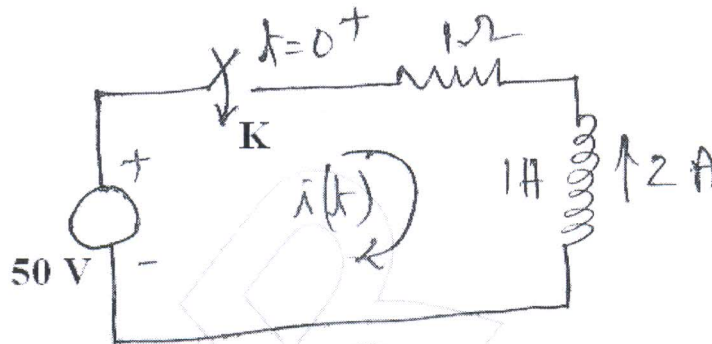


figure 1

- 2.a) For a passive two port network derive the expression for transmission and hybrid parameters.
- b) Find the ABCD parameters of the network shown below in figure 2. [15]

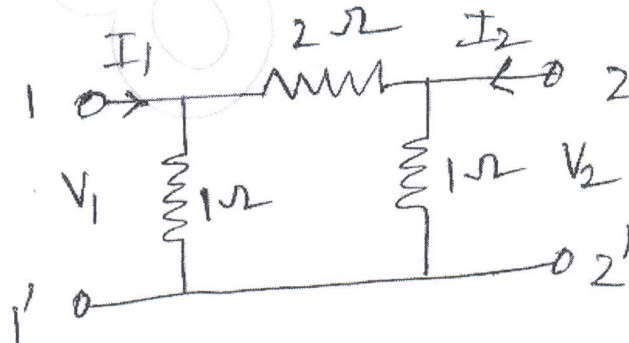


figure 2

- 3.a) Explain the nature of characteristic impedance, phase angle, cross over frequency in pass and stop bands.
- b) Derive the important relations in constant-k low pass filter and constant-k high pass filter. [15]
4. Discuss the functioning and significance of T-type and  $\pi$ -type attenuators. [15]