

II B. Tech I Semester Supplementary Examinations, May - 2019
NETWORK ANALYSIS
 (Com to ECE, EIE and ECC)

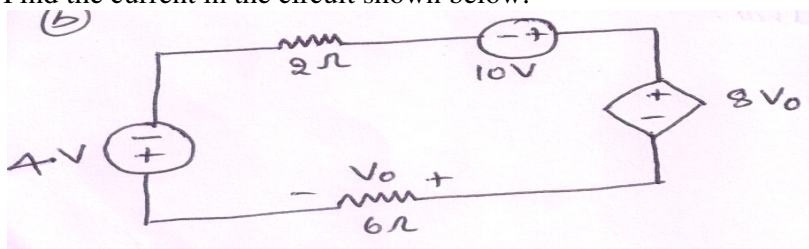
Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answer **ALL** the question in **Part-A**
 3. Answer any **FOUR** Questions from **Part-B**

PART - A

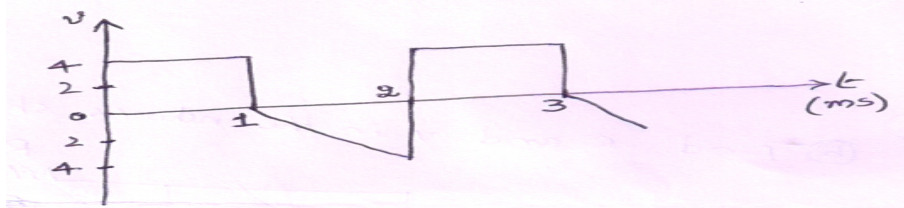
1. a) Define the following terms: (2M)
 i) Current ii) Voltage
 b) Find the current in the circuit shown below: (2M)



- c) Distinguish between Self inductance and Mutual Inductance (2M)
 d) State the Superposition theorem (3M)
 e) What does a Two Port network represent (2M)
 f) Derive the impulse response of Series RC circuit (3M)

PART - B

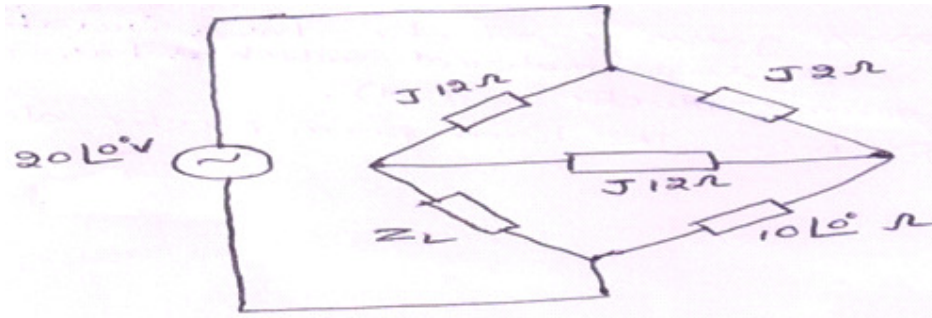
2. a) Explain the transient response of Series RC circuit when dc voltage is applied to the circuit. (7M)
 b) Calculate the rms and average values for the Voltage wave form shown : (7M)



3. a) Explain the following : (6M)
 i) Linear and Non – linear systems ii) Lumped and distributed systems
 b) An air – cored choking coil dissipates 200 W when connected to a 200 V, 50 Hz supply mains. It takes a current of 3 A. A second coil, taking a current of 2 A dissipates 270 W when connected to the same supply. Calculate the current and the total power consumed when the coils are connected in series across the same supply. (8M)



4. a) List the different properties of Series and Parallel resonant circuits (7M)
 b) A coil has an inductance of 1.3 mH and resonates at 600 KHz and its $Q = 30$. If the bandwidth required is 50 kHz what resistor should be connected across the coil? (7M)
5. Calculate Z_L for the maximum power transfer to it from the network shown in figure. Also calculate the amount of maximum power transfer (14M)



6. a) Explain the conditions to be fulfilled for Reciprocity and Symmetry in y-parameter representation (7M)
 b) Explain the conditions to be fulfilled for parallel connection of 2 two port networks (7M)
7. a) List the basic properties of Laplace transform (7M)
 b) For the figure shown, the dc voltage is applied to the circuit keeping the switch K open so that the steady state is reached. Determine the complete response for the circuit after closing the switch K. (7M)

