(3 Hours) **Total Marks: 80**

N.B: (1) Question No. 1 is compulsory.

(2) Attempt any three from the remaining questions.

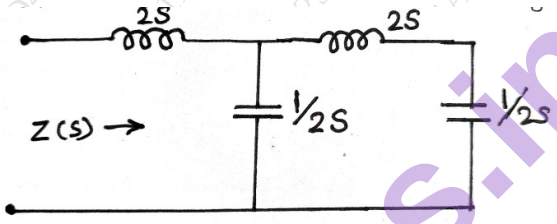
(3) Figures to the right indicate full marks.

(4) Each question is of 20 Marks

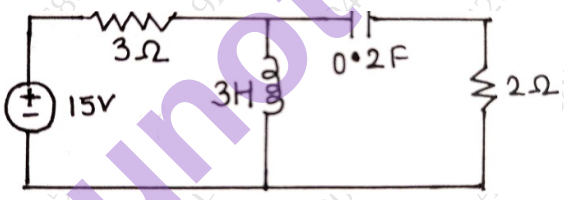
Q1. Attempt all questions

(a) Obtain Z parameters in term of Y parameters Marks:05

(b) Determine the driving point impedance of network shown in figure Marks:05

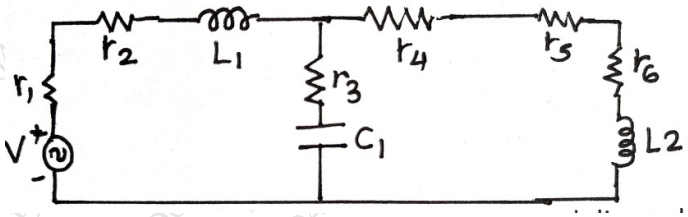


(c) Draw the dual of the network shown in figure. Marks:05

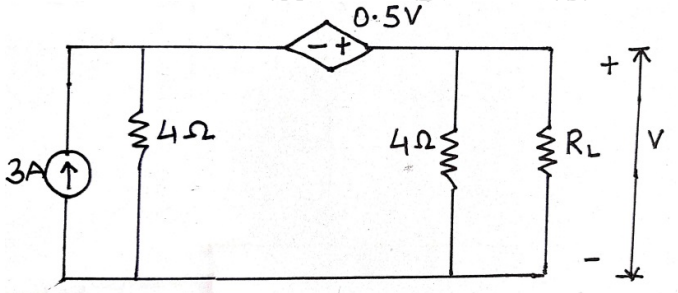


(d) State and explain Maximum power Transfer Theorem. Marks:05

Q2. (a) For the given network draw the oriented graph and write f-cutset and f-tieset matrix Marks:10

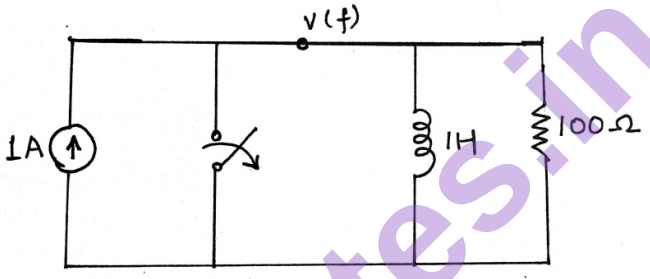


(b) What will be the value of R_L to get the maximum power delivered to it.What is the value of this power. Marks:10

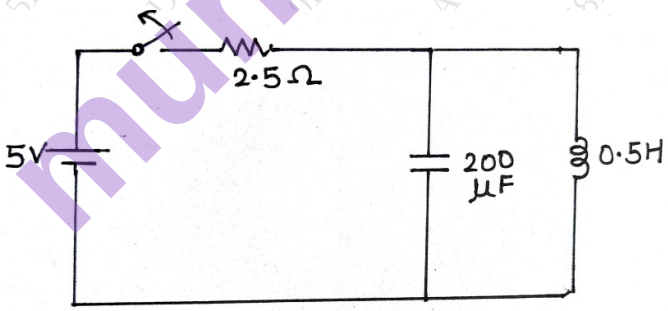


3(a) In the network shown in figure at t=0, the switch is opened. Marks:10

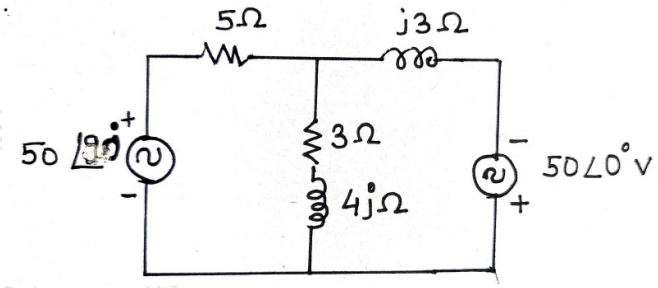
calculate v, dv/dt and d^2v/dt^2 at $t=0^+$



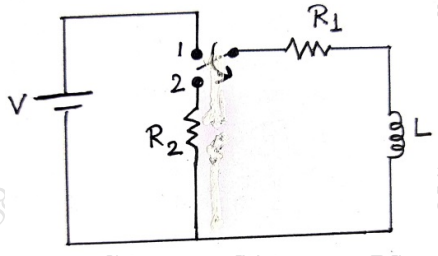
(b) In the network shown in figure the switch is closed and steady state is attained. At at t=0, switch is opened. Determine the current through the inductor. Marks:10



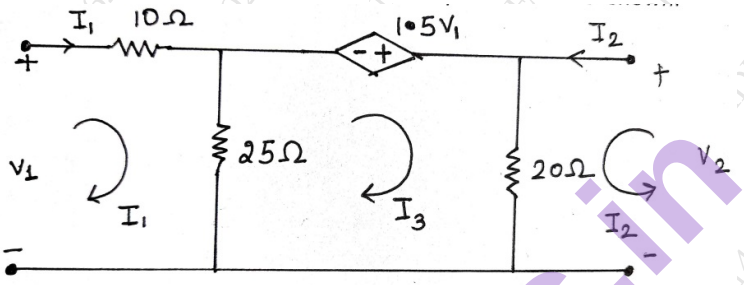
Q4. (a) State and explain Superposition theorem. Find current through 3+4j ohm impedance. Marks:10



(b) In the network shown in figure the switch is initially at position 1. On the steady state having reached, the switch is changed to position 2. Find current i(t) Marks:10

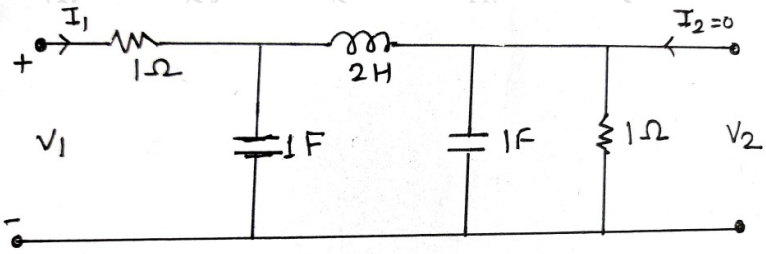


Q5.(a) Find ABCD parameters of given two port networks shown. Marks:10

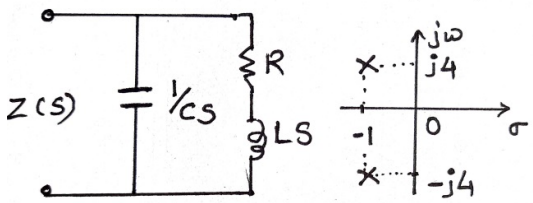


(b) Find Z parameters for the network shown. Check whether condition of Reciprocity is verified? Marks:10

Q6. (a) Determine voltage transfer function V_2/V_1 for given network. Marks:10



(b) The pole-zero diagram of the driving point impedance function of the network is shown below. At dc the input resistance is resistive and equal to 2Ω. Determine value of R,L,C Marks:10



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