Exam. Code: 0933
Sub. Code: 6973

1078

B. Engg. (Electrical & Electronics Engg.)

3rd Semester

EE-305: Network Analysis and Synthesis

Time allowed: 3 Hours | Max. Marks: 50

NOTE: *Attempt five questions in all, including Q. No. 1 which is compulsory and selecting atleast two questions from each Unit.*

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I. (a) Write STURM's test for PR functions.

(b) What is the objective of using network theorems?

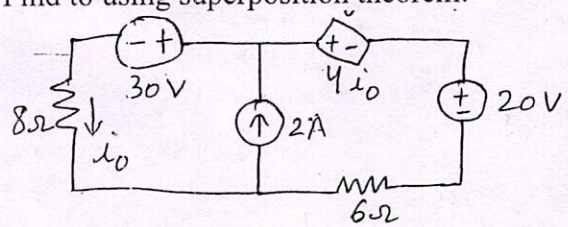
(c) Name circuit elements of ac networks and classify them as active and passive elements.

(d) Discuss significance of poles & zeros of a network.

(e) Write significance of putting negative sign in port variables of transmission parameters. (5×2)

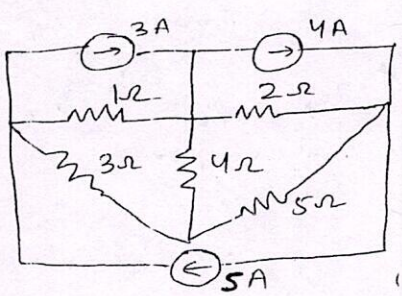
UNIT-I

II. (a) Find to using superposition theorem:



(b) Illustrate maximum power transfer with one example. (7+3)

III. For the circuit shown, select a tree, determine branch voltages and branch currents using mesh current method.



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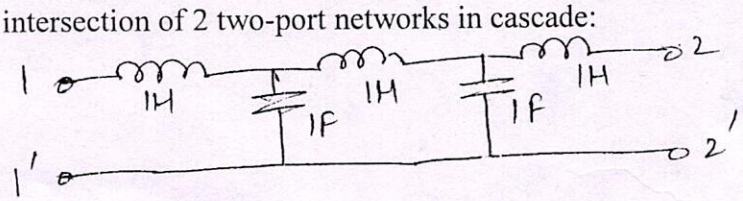
IV. Determine transmission parameters of the network shown using concept of intersection of 2 two-port networks in cascade:



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UNIT-II

V. (a) Find the range of K for which the system will be stable: $s^3+10s^2+(21+k)s+13k=0$

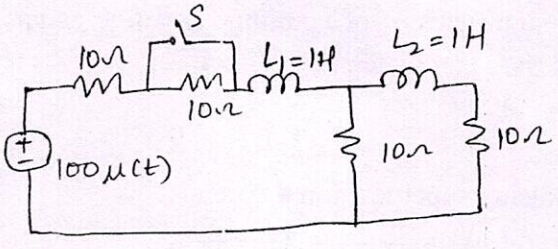
(b) Discuss the necessary conditions for driving point function. (6+4)

VI. Realise the following RC driving point function in: -

(a) Foster-I form

(b) Cauer-I form $z(s)=\dfrac{s^2+6s+8}{s^2+4s+3}$ (5+5)

VII. For the circuit shown, switch S is closed at t=0. Find current i(t) for t>0 through L_2=1H.



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