C14-EC-**403**

4436

BOARD DIPLOMA EXAMINATION, (C-14)
OCTOBER/NOVEMBER-2018
DECE-FOURTH SEMESTER EXAMINATION

NETWORK ANALYSIS

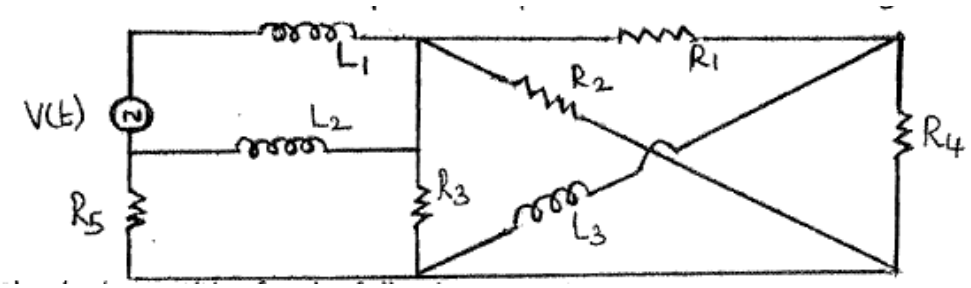
Time : 3 Hours] [Total Marks: 80

PART-A

3X10=30

Instructions : 1. Answer **All** questions.
2. Each question carries THREE marks
3. Answer should be brief and straight to the point

1. What are the limitations of Ohm's law?
2. Mention the applications of tuned circuits.
3. Determine the number of mesh equations required to solve the network given below.



4. Write the dual quantities for the following:-

   (i) Voltage source (ii) Resistance (iii) KVL
5. List any three advantages of Thevenin's and Norton's theorem.
6. Draw the equivalent circuits of star and delta connection and also write the transformation formulae.
7. Define steady state and transient response.

8. Define any two Z parameters of the two port network.

9. Define Neper and Decibel.

10. Define HPF and draw its ideal characteristics.

PART-B

10X5=50

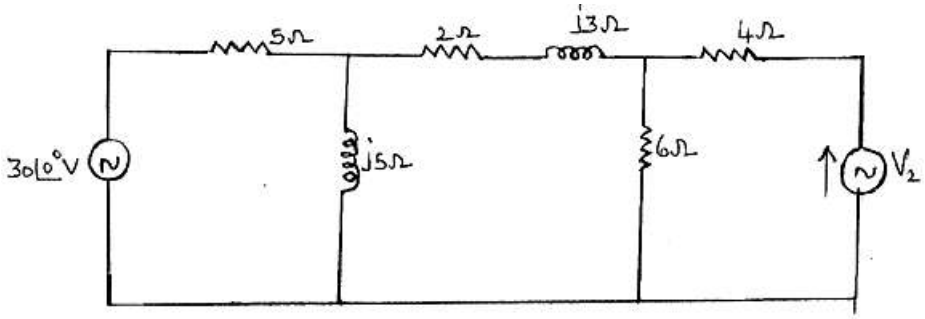
Instructions : 1. Answer any **five** questions. Each question carries **ten** marks.

2. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer

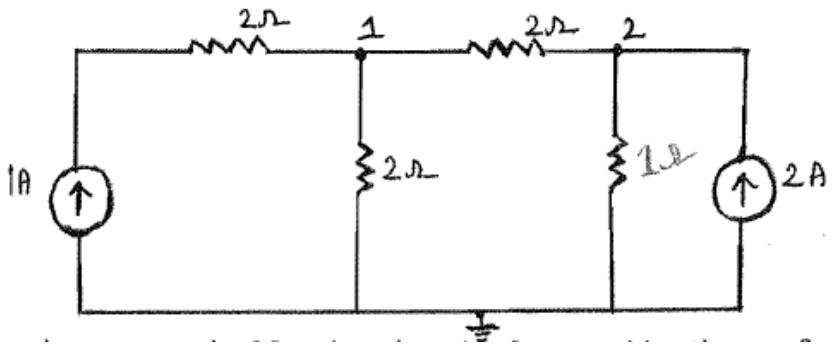
11. (a) Explain ideal voltage source and ideal current source.

(b) State Kirchoff's laws.

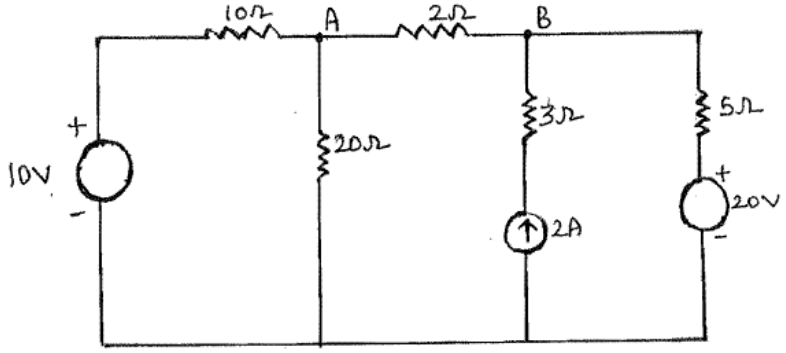
12. For the network figure shown determine V_2 such that the mesh current in the (2+j3)Ω impendence is zero using mesh current analysis.



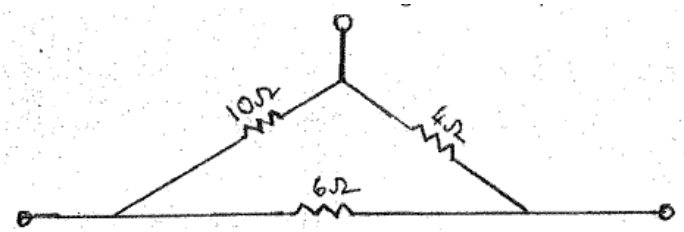
13. Determine the voltages at nodes 1 and 2 of the network shown below by using nodal analysis.



14. Find the voltage across the 2Ω resistor by using superposition theorem.

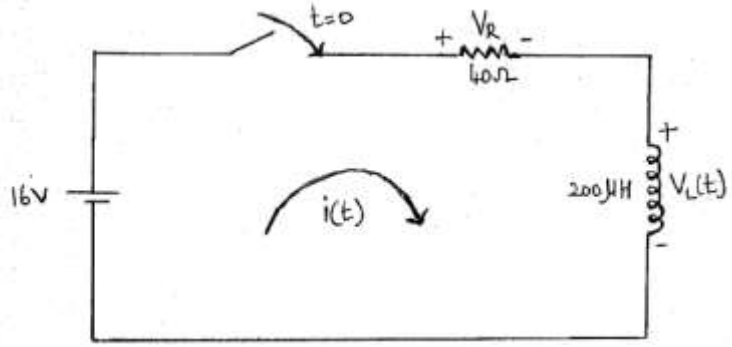


15. (a) Convert the delta network shown in figure to an equivalent star network.

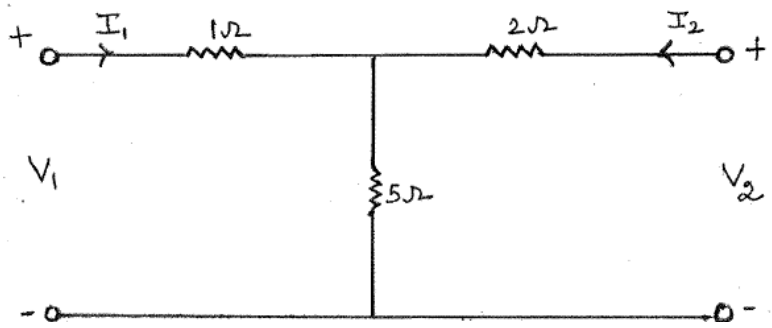


(b) Define maximum power transfer theorem for different load.

16. The switch in the following figure is closed at t=0. Write the mathematical expressions for $V_L(t)$,i(t) and $V_R(t)$ after the switch is closed.



17. Find the transmission parameters for the network shown in figure.



18. Derive the design formulas for constant-K low pass filter (T-type only).

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