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1st SEMESTER

B.Tech[ECE-EVE]

SUPPLEMENTARY EXAMINATION, FEB-2019
CEC-103 ENGINEERING ANALYSIS & DESIGN

Max. Marks: 40

Time: 3:00 Hours

Note: Attempt Any four questions. Assume suitable missing data, if any.

Q.1 For the circuit shown in fig. 1, obtain an expression for the current delivered by the source as a function of time, when the switch S is closed at t=0. Assume the circuit to be initially unenergised. **[10]**
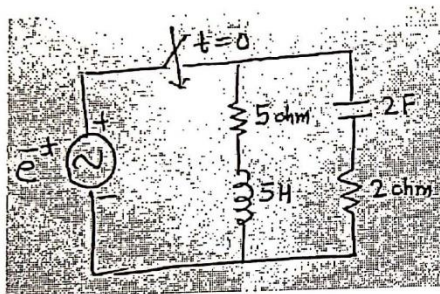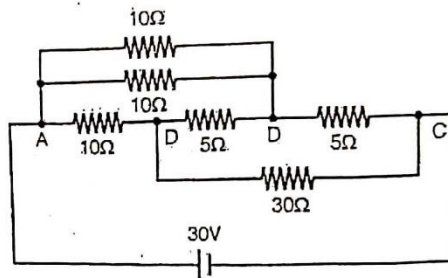

Fig. 1

Fig. 2

Q.2 a) State and explain the superposition theorem with a suitable example. **[5]**

b) Find the current through the 5-ohm resistor at D-D terminal in the circuit shown in fig. 2. **[5]**

Q. 3 a) Obtain the impedance Z for the following circuit shown in fig. 3. **[5]**

b) Find the V_{th} and R_{th} at terminal A-B for the fig. 4. **[5]**
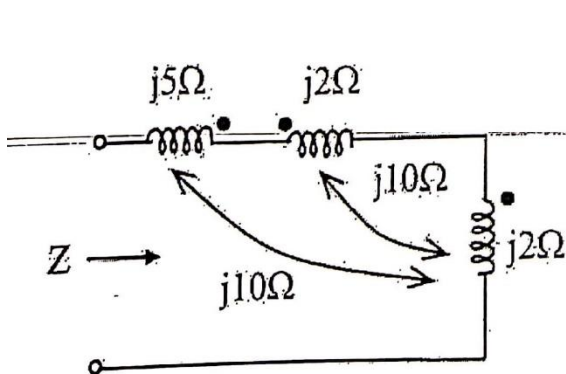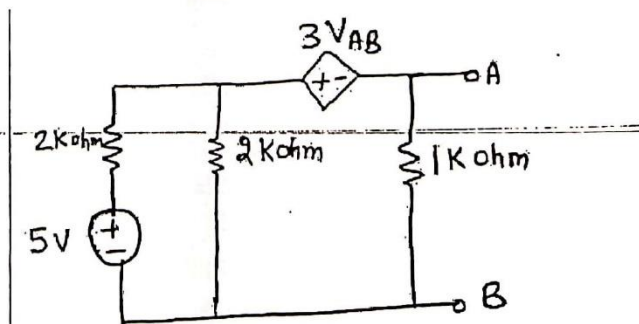

Fig. 3

Fig. 4

Q.4 a) Determine $z(t) = x(t) * y(t)$, where $X(s) = \frac{1}{S+1}$ and $Y(s) = \frac{1}{S+5}$. [5]

(" $*$ " denotes convolution operator).

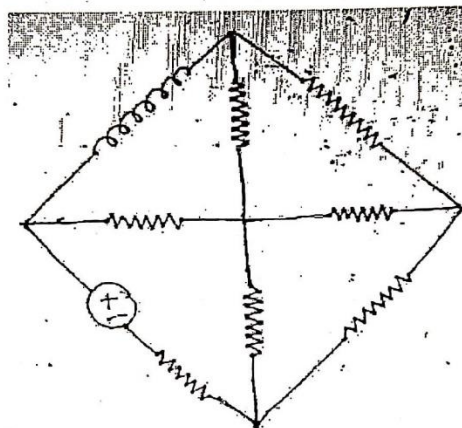b) Obtain the cut-set matrix for network shown in the fig. 5 [5]

Fig. 5

Q.5 State and prove the maximum power transfer theorem with suitable example. [1(

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