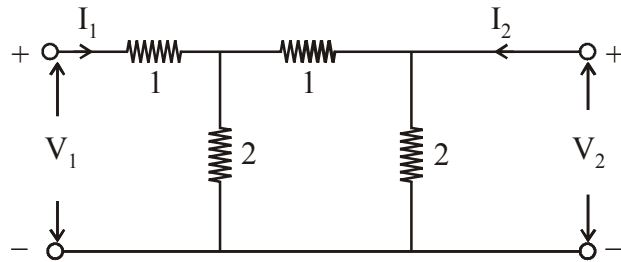(b) Explain significance of poles and zeros in network functions. **8**

4. (a) Determine transmission parameters for networks in cascase. **7½**

(b) Determine Y-parameters in terms Z-parameters. **7½**

Unit III

5. Obtain ABCD parameters for the network shown in Fig. : **15**

6. (a) What do you mean by prototype band pass filter ? Discuss its characteristics. **7½**

(b) How many trees are possible for the graph of network of given fig. ? **7½**

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B. Tech. EXAMINATION, Dec. 2017

(Third Semester)

(B. Scheme) (Main & Re-appear)

(ECE, AEI)

EE-211-B

NETWORK ANALYSIS AND SYNTHESIS

Time : 3 *Hours*]   [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Derive an expression for transient response of RL circuit to a unit step input. **8**

(b) Derive an expression of voltage across resistor and capacitor in given circuit, when $t > 0$. **7**
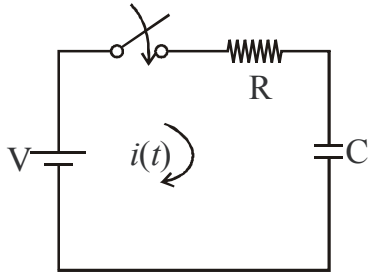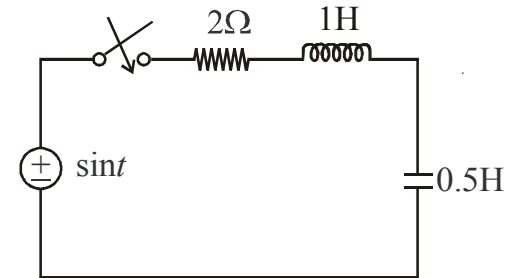

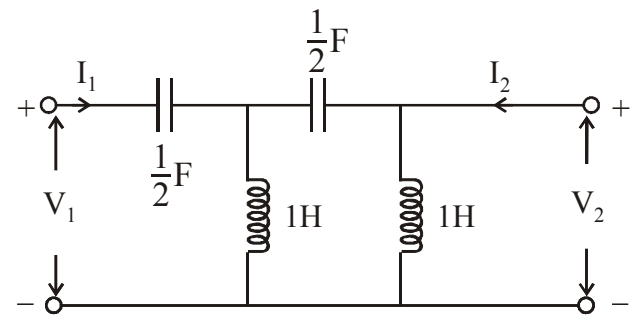**2.** (a) In the network of under giving fig. the switch is opened at $t = 0$. Find $i(t)$. **8**
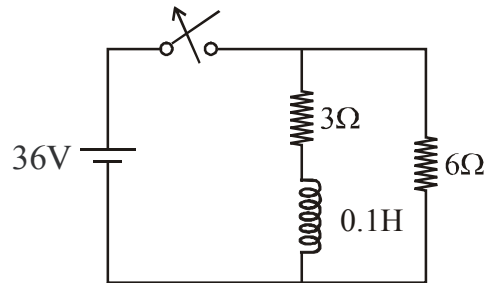
(b) For the network shown in under fig., the switch is closed at $t = 0$. Determine the current $i(t)$ assuming zero initial conditions. **7**
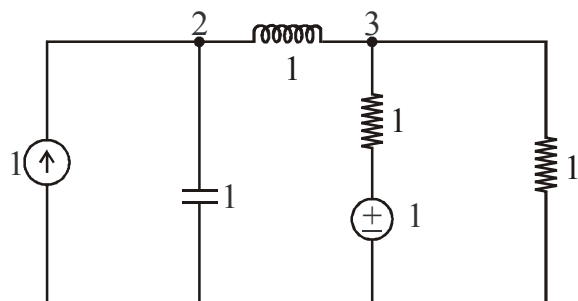

Unit II

3. (a) Find h-parameters for networks shown in fig. : **7**

Unit IV

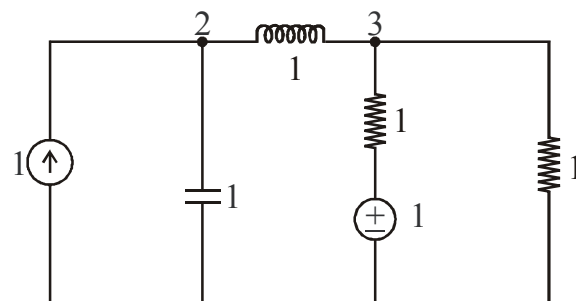**7.** (a) Explain the properties of positive real functions. **7½**

(b) Test whether the polynomial P(s) is Hurwitz. **7½**

$$P(s) = s^5 + s^3 + s$$

8. (a) Determine the foster form of realisation of the RC impedance function : **10**

$$Z(s) = \frac{(s+1)(s+3)}{s(s+2)(s+4)}$$

(b) Define tree, co-tree, tieset, cutest, incidence matrix. **5**

M-C-22   5   700