2004

B. E. 3rd Sem. (ECE)

Examination – December, 2013

NETWORK THEORY

### 'E' Scheme

Paper : EE-203-E

Time : Three hours]   *[Maximum Marks : 100*

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

Note : Attempt any *five* out of eight questions.

1. (a) Describe the transient response of R-C ckt with impulse function.   10

    (b) In the ckt of figure, steady state exists when switch K is in position 1, At t = 0, it moved to position (2). Obtain the expression for current using L. T. :   10


P. T. O.
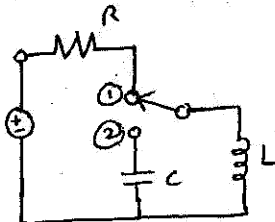
2. (a) Derive z-parameters in terms of T-parameter. **10**

(b) Explain series-series connection for two port n/w with neat ckt diagram. **10**

3. Define Transfer Function. Can we define transfer function for one port n/w ? Explain with reason. Also write all possible transfer functions & inverse transfer functions. **20**

4. (a) Define tree, forest, graph, oriented graph and connected graph with examples. **10**

(b) For given ckt, draw graph & prepare Cut set matrix & Tie set matrix. **10**
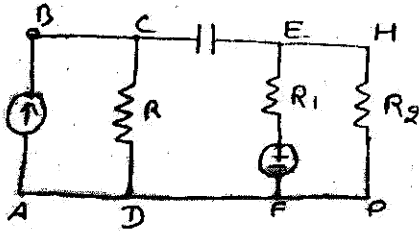
5. (a) State the properties of real functions. **10**

(b). Define Hurwitz polynomial and also write its properties. **10**

6. An impedance function is given by : **20**

$$Z(s) = \frac{(s+2)(s+9)}{s(s+4)(s+5)}$$

Find R-C representation using foster (1), foster (2) & cauer (1), cauer (2).

7. (a) $F(s) = \dfrac{s^2 + s + 6}{s^2 + s + 1}$ check for P. R. function.   10

(b) Explain properties of R. C. impedances.

8. Write short notes on :   20

(a) Low pass filter.

(b) Restrictions on pole zero locations for transfer functions.