

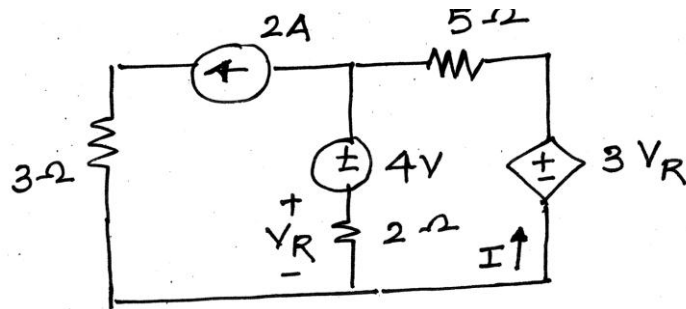
Please check whether you have got the right question paper.

- N.B:
1. Question.No.1 is compulsory.
 2. Attempt any Three questions out of remaining five.
 3. Assume suitable data if required.
 4. Figures to right indicate full marks.

Q. 1 a) State whether the following polynomials is Hurwitz. (05)

$$P(s) = S^4 + S^3 + 2S^2 + 3S + 2$$

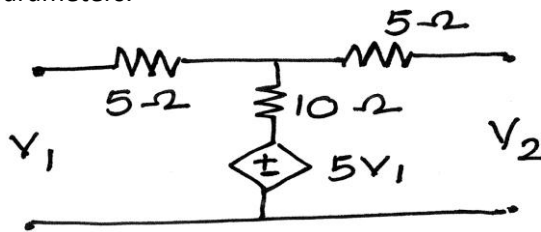
b) Find I (05)



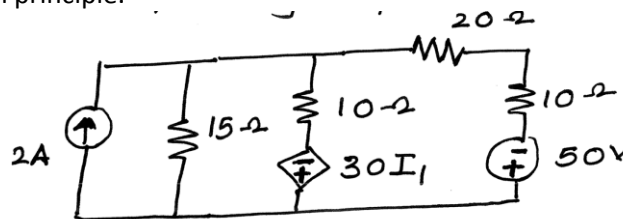
c) Obtain pole zero plot of given function (05)

$$H(s) = \frac{20(s+1)(s+5)}{s(s^2+2s+2)(s+7)}$$

d) For a given T network find z – parameters. (05)

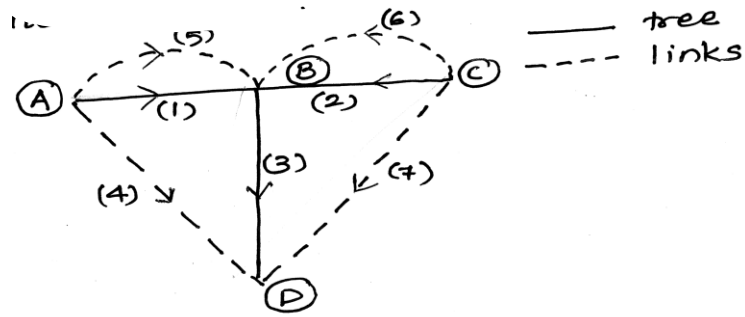


Q. 2 a) Find I, using superposition principle. (10)

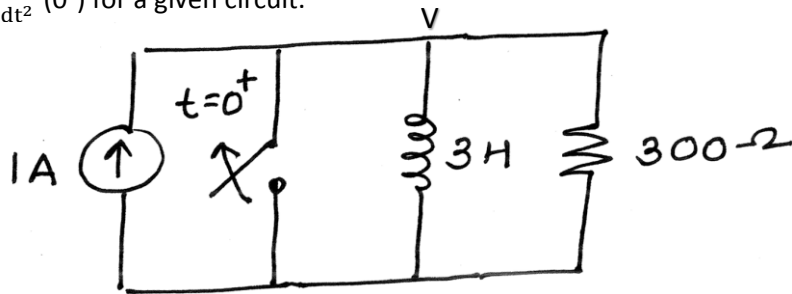


b) For the given oriented graph. Find (10)

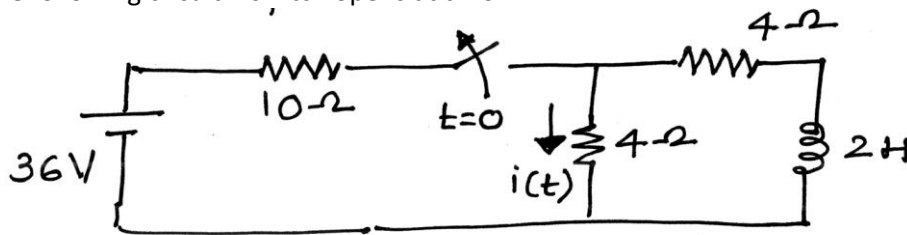
- i) Incidence matrix.
- ii) F-tie-set matrix
- iii) F – cutset matrix.



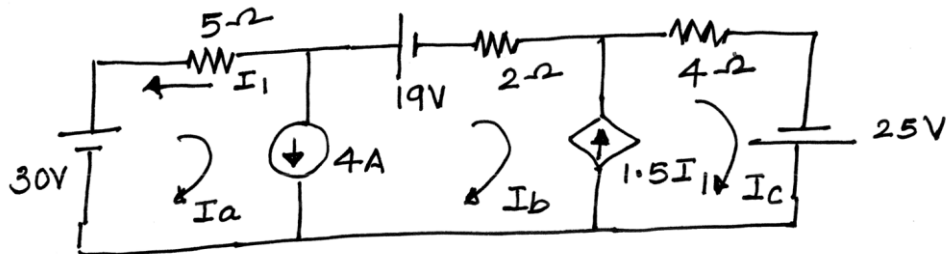
Q. 3 a) Find $v(0^+)$, $\frac{dv}{dt}(0^+)$, $\frac{d^2v}{dt^2}(0^+)$ for a given circuit. (10)



b) Find $i(t)$ for the following circuit if switch opens at $t = 0$ (10)

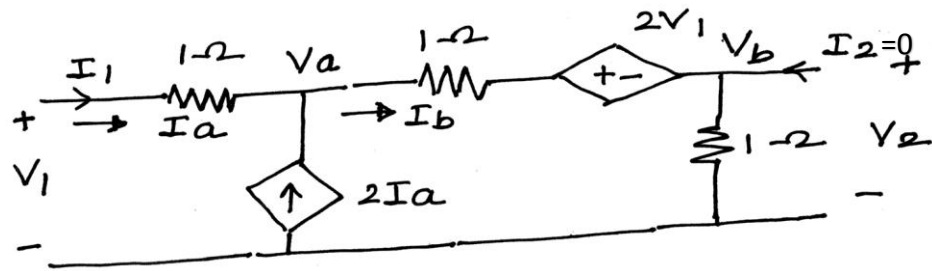


Q. 4 a) Using mesh analysis to find I_a , I_b & I_c (10)



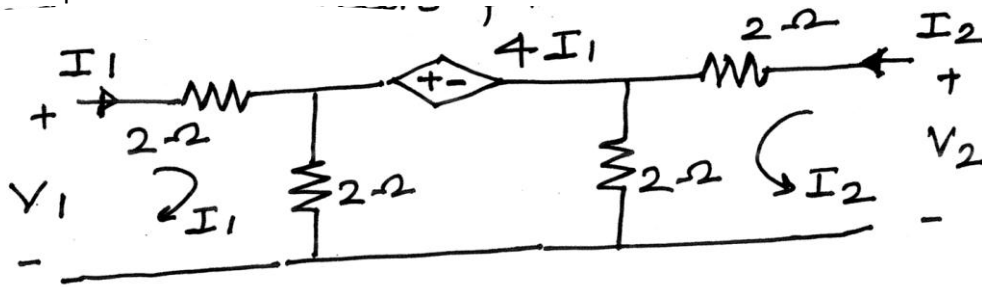
b) Find condition of reciprocity and symmetry for Y – parameters. (10)

Q.5 a) Find $\frac{V_2}{V_1}$



(10)

b) Find open circuit parameters.



(10)

Q.6 a) Find cauer I & II for a impedance function.

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

(10)

b) Find Foster I & II for a given function.

$$Z(s) = \frac{(s^2+1)(s^2+9)}{s(s^2+4)}$$

(10)
