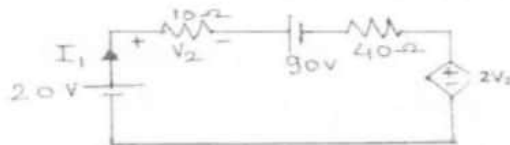**[Time: Three Hours]**
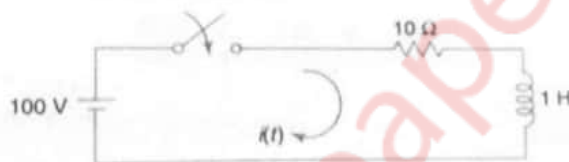
[Marks:80]

N.B: 1. Question.No.1 is compulsory.
         2. Attempt any three questions from remaining five questions.
         3. Assume suitable data wherever necessary.

1   Attempt the following: 20

  a Find the value of I_1

  b In the given network the switch is closed at t= 0. With zero current in the inductor find i, $\frac{di}{dt}$, at t= 0^+

  c What are the advantages of an A.C. Bridge?
  d Obtain pole-zero plot of the following function

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

2 a Explain construction and working of D'Arsonaval Galvanometer.   10
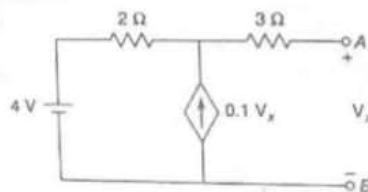   b Test whether polynomial is Hurwitz;   10

        i) $P(s)=s^4+s^3+5s^2+3s+4$

        ii) $P(s)=s^5+3s^3+2s$

3 a State how you will derive the expression for frequency in case of Wien Bridge.   10
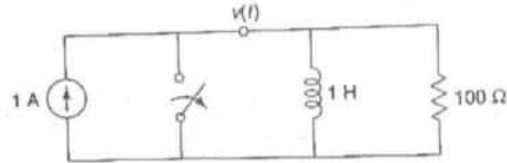   b Explain construction and working of PMMC instrument.   10

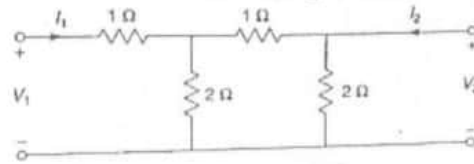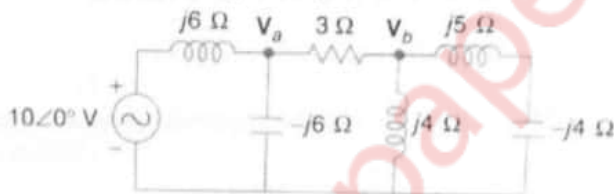4 a Find Thevenin's equivalent network   10

TURN OVER

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2

b In the network shown in fig. At t=0, the switch is opened. Calculate v, $\frac{dv}{dt}$ at t=0+   10

5 a Obtain ABCD parameters for the network shown in fig.   10

b In the network shown below determine V_a and V_b.   10

6 a What are Q meters and how do they work?   10

b For the network shown below, calculate the maximum power that may be dissipated in load   10
resistor R_L

57984

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