

R07

Code: R7410203

B.Tech IV Year I Semester (R07) Supplementary Examinations, May 2013

POWER SYSTEM ANALYSIS

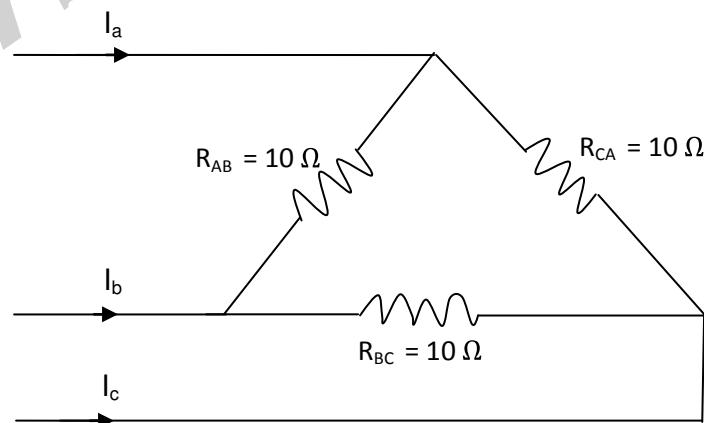
(Electrical & Electronics Engineering)

Time: 3 hours

Max. Marks: 80

Answer any FIVE questions
All questions carry equal marks

- What is primitive network matrix and represent its forms? Prove $Y_{bus} = A^t [y] A$ using singular transformation?
- Explain merits and demerits of building Z_{bus} algorithm.
 - Write step-by-step algorithm for Z_{bus} building for a network containing no mutuals and no phase shifting transformers.
- Derive the basic equations for load flow studies and also write the assumptions and approximations to get the simple equations.
- What is decoupled load flow? What are the advantages of such load flow solution?
 - Distinguish between decoupled load flow solution and fast decoupled load flow solution.
- What are the advantages of p.u.system?
 - Prove that base impedance = $KV_{LL(Base)}^2 / MVA_{3-\phi(Base)}$.
- A balanced 200 V. 3 phase supply feeds balanced resistive load as shown in figure. If the resistance R_{BC} is disconnected. Determine I_a , I_b and I_c and symmetrical components of I_a , I_b and I_c .



- A salient pole synchronous generator is connected to an infinite bus via a line. Derive an expression for electrical power output of the generator and draw $p - \delta$ curve.
- What are the steps to be followed for determining multi machine stability?
 - Write the state variable formulation of swing equations.
