2054
B.E. (Electronics and Communication Engineering)
Second Semester
EC-204: Electrical Science

Time allowed: 3 Hours   Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.*

x-x-x

I.   Explain the following:-

   a) Name independent and dependent sources

   b) Electromagnetic Induction

   c) Example of star connection

   d) Name network topologies

   e) Need of filter synthesis   (5x2)

UNIT - I

II.   a) Explain self and mutual induction.

      b) Explain graphical method of determining the duality of networks   (2x5)

III. Derive the relations between star to delta and delta to star transformations.   (10)

IV.   Write technical note on:

   a) Superposition Theorem

   b) Maximum Power transfer Theorem   (2x5)

UNIT - II

V.   Explain filter and its classification in detail. Also define the propagation constant of pure reactive network and ladder network.   (10)

VI.   Design constant-k, m-derived filters and composite filter.   (10)

VII. Explain principle of single and three-phase induction motors with the help of diagrams.   (10)

x-x-x