Code No: RT21021 **R13** SET - 1

II B. Tech I Semester Supplementary Examinations, Oct/Nov- 2017
ELECTRICAL CIRCUIT ANALYSIS - II
(Electrical and Electronics Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1. a) What is meant by a three phase balanced network? Give its properties. (4M)
   b) Give comparison between balanced and unbalanced circuits. (4M)
   c) Write about the transient response of R-L circuit? (4M)
   d) Write the basic equations of Z and Y parameters? (4M)
   e) Write briefly about the positive real function? (4M)
   f) State Fourier theorem? (2M)

PART –B

2. a) Discuss in detail about the measurement of power and power factor of a balanced three phase circuit? (8M)
   b) Find the line currents provided by the balanced supply of 100V, 50Hz and each phase is having an impedance of (6.5+8.1j) connected in delta? (8M)

3. a) Derive the relations for the 3 phase in balanced network? (8M)
   b) A 20HP induction motor is supplied from 400V 3 phase 50Hz supply. The efficiency being 85% the power factor of the operation is 0.8. Obtain the active power consumed, the apparent power, the reactive power and the line current? (8M)

4. a) Analyze the transient response of R-C series network with D.C excitation? (8M)
   b) A D.C voltage of 100 V is applied to a coil having R=100ohms and L=10.1H. What is the value of the current 0.1 sec later the switch is ON? What is the time taken by the current to reach half of its final value? (8M)

5. a) Derive the hybrid parameters of a two port network? (8M)
   b) Express the relationship between Z-and h-parameters. (8M)

6. Synthesis all four forms (Foster form I & II, Cauer form I & II) of RC driving point function $Z_{RC}(s)=\frac{4(s+2)(s+4)}{(s+1)(s+3)}$. (16M)

7. a) Explain about even function symmetry in Fourier series? (5M)
   b) Explain briefly about phase angle spectra and line spectra (6M)
   c) Explain the trigonometric form of Fourier series. (5M)
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