

II B. Tech I Semester Supplementary Examinations, October/November - 2019

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**

PART -A

1. a) Write short notes on phase sequence in the 3 phase system? (4M)
- b) Write the voltage relations in star and delta connections of a three phase system? (4M)
- c) Write the transient response of RLC circuit with AC excitation? (4M)
- d) What is meant by a cascade network? What is it need? (4M)
- e) Write the properties LC immittance function. (4M)
- f) Write the Fourier series in the exponential form? (2M)

PART -B

2. a) Discuss in detail about the measurement of reactive power in a balanced three phase balanced circuit with one Wattmeter. (8M)
- b) A 3 phase 4 wire 100V (L-L) system supplied a balanced star connected load having impedances of $(10+1.55j)$ ohms in each phase. Find the line currents and draw the phasor diagram. How much current is flowing through the neutral? (8M)
3. a) Explain how the 3 phase power is measured by three watt meter method? (8M)
- b) Analyze a 3 phase un balanced network by loop method? (8M)
4. a) Analyze the transient response of R-L-C series network with D.C excitation? (8M)
- b) A resistance $R \Omega$ and 5.5 microfarad capacitor are connected in series across a 100 V D.C supply. Calculate the value of R such that the voltage across the capacitor becomes 50V in 5 sec, after the circuit is switched ON? (8M)
5. a) Derive the open circuit impedance parameters of a two port network? (8M)
- b) The following readings are obtained experimentally for an un known two port network. Compute the Z parameters? (8M)

	V_1	V_2	I_1	I_2
Output open	100V	65V	10A	0A
Input open	30V	40V	0A	3A

6. a) Explain the properties of deriving point immittances of LC networks? (8M)
- b) The driving point impedance of an LC network is given by $Z(s) = [(10s^2+40)*(10s^2+160)]/[s^3+9s]$. Obtain the first form of foster network? (8M)
7. a) Derive the Fourier series in trigonometric form? (6M)
- b) State and explain about the Fourier theorem? (5M)
- c) Discuss the properties of Fourier transform. (5M)