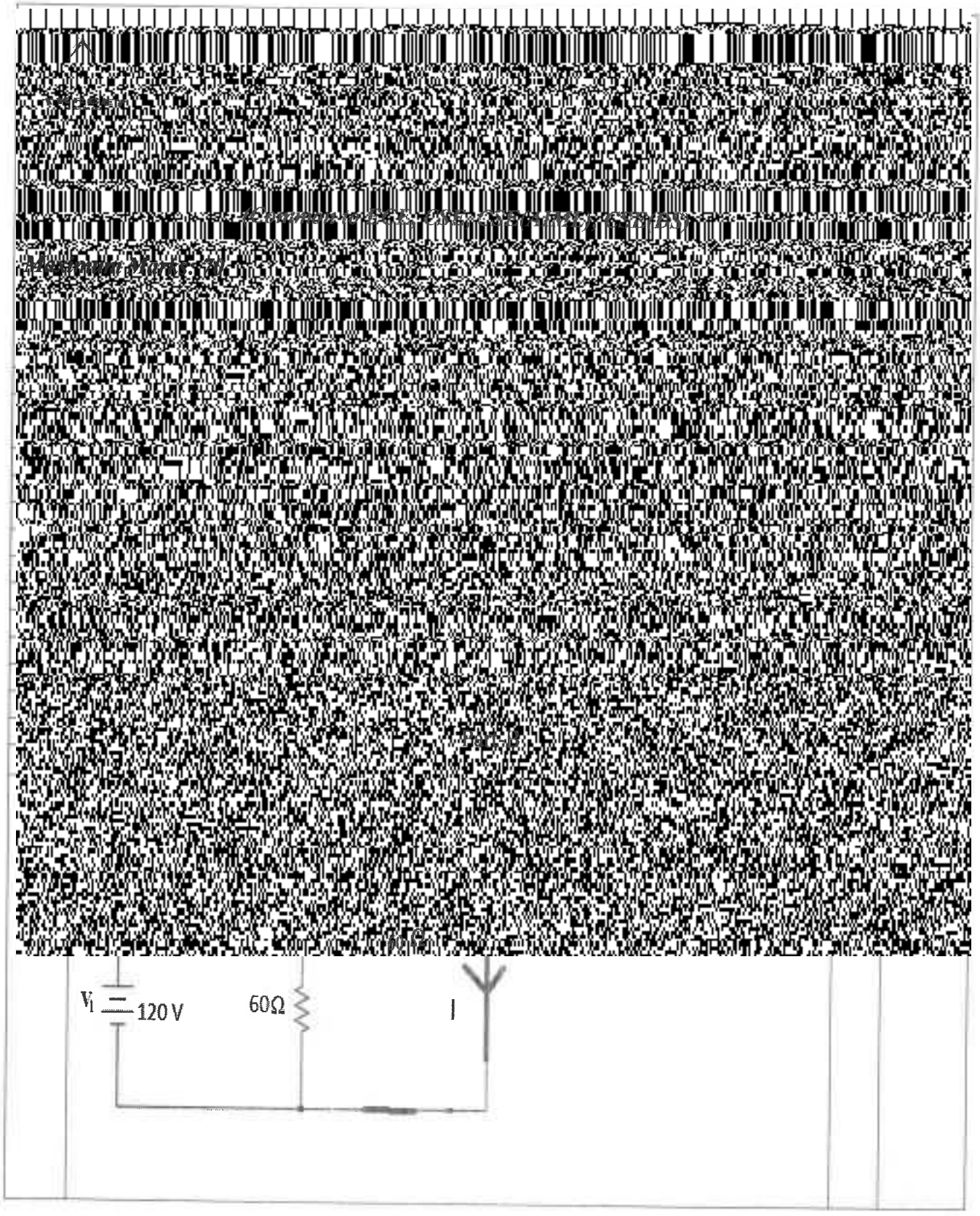
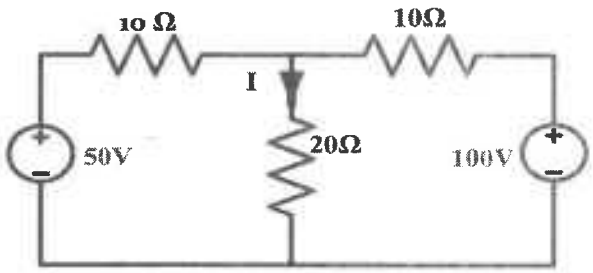

V_1
120 V
60Ω
I

	OR		
12	Calculate the current (I) flowing through 20 Ω using Superposition theorem [10M] 	1	L2
13	Explain following terms: [10M] i) form factor ii) peak factor iii) phase difference iv) frequency v) Power factor	2	L2
	OR		
14	Derive the expression for impedance (Z), phase angle (ϕ) and power factor (cosϕ) for RC series circuit with relevant phasors. [10M]	2	L2
15	a) Derive the Emf equation of transformer. [5M] b) A 50KVA, 1100/400 V, 50Hz single phase transformer has 80 turns on the primary. Calculate: [5M] i) the number of turns on the secondary ii) the full load primary and secondary currents and iii) the maximum value of the flux	3	L2
	OR		
16	Explain in detail different types of losses in transformer. [10M]	3	L2
17	Explain Back Emf of DC motor. Derive the torque equation of DC motor? [10M]	4	L2
	OR		
18	Explain the construction and working principle of 3-phase induction motor. [10M]	4	L2
19	Explain the different types of Earthing methods in detail. [10M]	5	L2
	OR		
20	Explain the different types of wires and cables. [10M]	5	L2