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III Semester B.Tech. in Electrical E	IRCUIT TH	EORYME Of to	mēruo A (H
the fig. 2 using Norson's therrioH : emiT			
Instructions: 1) Answer any five five questions from 2) Each question can marks in Part B.	om Part B rries 5 (five) m		tanar #L
PAR	T – A	Fix 2	(5×5=25)
I. Answer:any five:onlysqso a bas H 2.03		ce of 20 cinms as	,
1) State and explain the Kirchhoff's law	across a 220 V	nected in series	Farad con
2) Derive the formula for impedance in3) State and explain Thevenin's theore4) What is meant by resonance? Explain	n series RLC ci em. mubni ,eonstais un.	rcuits. social series across	i) Impeda ë) Curren
5) What are effects of unbalanced load	in three phase	circuits?	
6) Derive the equation for power measu	urement in two	wattmeter meth	od.
7) Derive the mutual inductance in couple of some substitution of the sone of	pled circuits. Pasea a garvad phase circuits	rical coils sach connected in delv	14) Twee ider 0.5 bare i
ıoi .pa r		Hist	4.8.7
I. Answer any five only:		<u>.</u>	c) Power
power of a 3 phase execution dicared (e the honor dicared has no the circuit when power ractor of the circuit when	o measure (ho works tiuorio a lively, timo me	neter connected t Id 500 W. <mark>Sis</mark>pic	15) Two watta 2500 W an
A I B I2		e readings are po	
Y I, +12		er reading is obti he wettereter.	rlo lioo
indiction motor ranging on title loke waterneers (White Red 100 KW and	50 i lz, 3 phase easured by two	fefficiency, is m	16) The power with 90% o100 K.W. F
	ewog (ii — :	jugni 15%	i) The pov
ine out the contract of the co	iv) The l	actor and	ii) Power t
Fig. 1	a an an ann an Airgean ann an Airge	No. 1944	P.TO.

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10) Derive the formula for star to delta and delta to star conversion: 11) A current of 20 amps flows in accircuit with 30° angle of lag when the applied voltage is 200 V. Find the resistance, reactance and impedance. 12) Find the current in 20 ohms resistance in the fig. 2 using Norton's theorem a comit and and destructions of the sucrement five onessions Fig. 2 (5x5=25) PART - A13) A resistance of 20 ohms an inductance of 0.2 H and a capacitance 100 micro Farad connected in series across a 220 V, 50 Hz, Determine history bas otare (1 i) Impedance 2) Derive the formula for impedance in series KLC circuits ii) Current 3) state and explain Thevenin's theorem. iii) Voltage drop across resistance, inductance and capacitance in the work of the control of th iv) Power factor 5) What are effects of unbalanced load in turce phase circuits v) Phase angle vi) Power in watter the equation for power areasurement at two wattmens and areas (iv 14) Three identical coils each having a resistance at 15 ohms and inductance of 0.5 H are connected in delta to a 415 V, 50 Hz, 3 phase supply. Determine (02 a), Line current b) Power factor c) Power L. Auswer any five only: 15) Two wattmeter connected to measure the power of a 3 phase circuit indicated 2500 W and 500 W respectively. Find the power factor of the circuit when a) Both the readings are positive and b) The later reading is obtained after reversing the connection of the current coil of the wattmeter. 16) The power input to a 2 KV, 50 Hz, 3 phase induction motor running on full load with 90% of efficiency, is measured by two wattmeter's which read 300 KW and 100 KW. Find i) The power input ii) Power output. iii) Power factor and iv) The line current. Pig. OTH