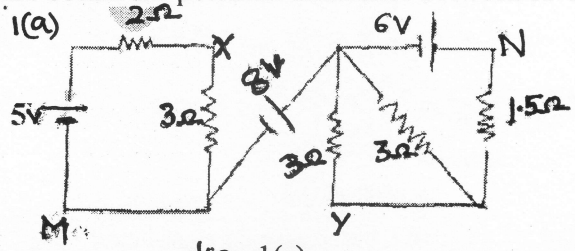
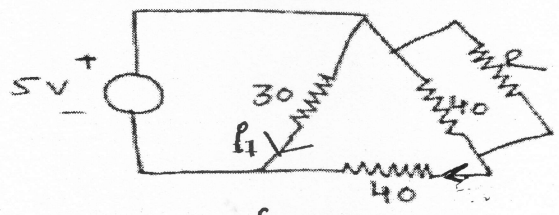
Vivekananda College of Engineering & Technology, Puttur [A Unit of Vivekananda Vidyavardhaka Sangha Puttur ®] Affiliated to VTU, Belagavi & Approved by AICTE New Delhi			
CRM08	Rev 1.9	EC	19/10/19

CONTINOUS INTERNAL EVALUATION - 1

Dept: EC	Sem / Div: 1st A, B, C	Sub: Basic Electrical Engineering	S Code:18ELE13
Date:25/10/19	Time: 3:00-4:30PM	Max Marks: 50	Elective: N

Note: Answer any 2 full questions, choosing one full question from each part.

QN		Questions	Marks	RBT	CO's
		PART A			
1	a	Define KVL and obtain the potential difference between X-Y and M-N in the fig 1(a)  fig 1(a)	10	L3	CO1
	b	A capacitor of 50uF shunted across a non inductive resistor of 100Ω is connected in series with a resistor of 50Ω and the circuit is connected to 200V, 50Hz supply. Find the i) circuit current ii) voltage across 100Ω and 50Ω resistor and power factor.	8	L3	CO1
	c	Derive the RMS and average value of sinusoidal voltage in terms of its maximum value.	7	L2	CO1
		OR			
2	a	Find the value of R shown in fig 2(a) so that the current drawn from the circuit is 250mA.Also find the current i1 and i2  fig 2(a)	8	L3	CO1
	b	A voltage of v=100sin314t is applied to a circuit consisting of 25Ω resistor and 80μF capacitor in series. Determine i)peak value of current ii) power factor iii) total power consumed by he circuit	7	L3	CO1
	c	With the aid of phasor diagram obtain the relationship between the line and phase values of star connected system. Also derive the expression for power in a star connected system.	10	L2	CO1
		PART B			
3	a	A voltage of 200V, 50Hz is applied to a series circuit consisting of a resistor, an inductor and a capacitor. The respective voltage across these components are 170V, 150V and 100V. The current drawn by the circuit is 4A. Find the value of R, Land C of the circuit. Also calculate the power	10	L3	CO1

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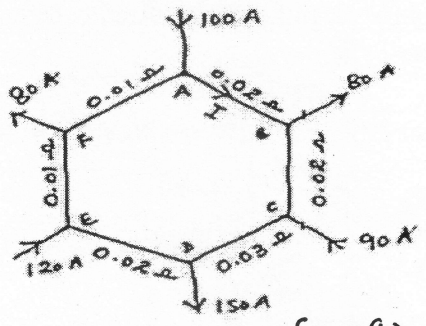
		factor of the circuit.			
	b	A circuit consist of 2 parallel resistor having resistance 20Ω and 30Ω respectively connected in series with 15Ω resistor. If current through 30Ω resistor is 1.2A i) find the current through 20Ω and 15Ω resistor ii) The voltage across 15Ω and 20Ω resistors and iii) total power in the circuit.	8	L3	CO1
	c	State the advantage of three phase over single phase.	7	L2	CO1
		OR			
4	a	State ohms law and mention its limitations.	6	L2	CO1
	b	Find the current in various branches in the circuit shown in fig 4(b)  fig 4(b)	6	L3	CO1
	c	A balanced star connected load of (8+j6)Ω per phase is connected to a three phase 230V supply. Find the line current, power factor, reactive power and total power in the circuit.	6	L3	CO1
	d	With neat sketch briefly explain how an alternating voltage is produced when a coil is rotated in a magnetic filed.	7	L3	CO1

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