CRM08	Rev 1.11	EC	10/2/22

CONTINUOUS INTERNAL EVALUATION – 2

Dept: EC	Sem / Div: I/ABC	Sub: Basic Electrical Engineering	S Code:21ELE13
Date:17/02/22	Time: 3:00-4:30	Max Marks: 40	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	Two circuits A and B are connected in parallel across 200V, 50Hz supply. Circuit A consist of 10Ω resistance and 0.12H inductance in series while circuit B consist of 20 Ω resistance in series with 40μF capacitance. Calculate I) Current in circuit and B ii) Total current iii) Total power	8	L3	CO1
	b	Show that two wattmeters are sufficient to measure three phase power for 3 phase balanced circuit.	6	L2	CO1
	c	In three phase star connection find the relation between line and phase values of current and voltage. Also derive the equation for three phase power.	6	L3	CO1
		OR			
2	a	A balanced three phase star connected load draws power from 440V supply. The two wattmeter connected indicated W1= 750W and W2=1.5KW. Calculate power, power factor and current in the circuit. If the W1 wattmeter is reserved, what would be the phase angle between voltage and current.	8	L3	CO1
	b	A balanced delta connected load of 8+j6 per phase is connected to a 3 phase 230V, 50Hz voltage supply, find i) phase current ii) line current iii) power factor	6	L3	CO1

iv)power v) reactive power vi) volt ampere

c	What is advantage of high voltage transmission.	6	L2	CO3

PART B

3	a	Three coil each having resistance of 10Ω and inductance of 0.02H are connected in star across 440V, 50Hz 3phase supply. Calculate the line current and total power consumed.	6	L3	CO1
	b	Define earthing. Why is earthing required? Explain pipe earthing with diagram	8	L2	CO4
	c	Mention the relative advantage and disadvantage of overhead lines and underground cables for distribution of electrical energy.	6	L2	CO3

OR

4	a	Write the difference between Fuse and MCB.	5	L2	CO4
	b	Calculate the electricity bill amount for a month of 31 days, if the following devices are used as specified. (A) 3 bulbs of 40W for 6 hours (B) 4 tube lights of 50W for 8 hours (C) A T.V. of 120W for 6 hours Given the rate of electricity is Rs. 2.50 per unit	5	L3	CO4
	c	A voltage V=100 sin 314t is applied to a circuit consisting of a 25Ωresistor and an 80μF capacitor in series. Determine I) peak value of current ii) Power factor iii) Total power consumed by the circuit. iv) find the components of the power triangle.	10	L3	CO1

Prepared by: Mrs Sonmya

HOD