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END SEMESTER EXAMINATION, EVEN SEM 2022-23

Time : 3 hours Program Name : B.Tech. (CE, ME, EEE) Course Name : Basic Electrical Engineering

Total Marks : 100 Semester : II Course Code : BTEE201

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Note: All questions are compulsory. No student is allowed to leave the examination hall before the completion of the time. Use of scientific calculator is allowed.

Q. No 1	Attempt Any Four Parts, Each Question Carries 5 Marks.	CO	BL
(a)	Explain and differentiate the following pair of terms with respect to dc networks:	CO 1	2
	Active element and Passive element (b) Node and Junction (c) Mesh and Loop (d)		
	Unilateral and Bilateral elements.	CO 1	2
(b)	Drive the steps from converting star circuit to delta circuit in DC circuit.	CO 1	3
(c)	Draw the Thevenin's equivalent circuit for the circuit shown in figure 2Ω 3Ω $10 V + 12 \Omega \leq R \Omega \leq B$ B		
(4)	Drive the condition of maximum power transfer from source to load in a DC circuit?	CO 1	2
(d) (e)	For the circuit in the figure below, find current in 16 Ω resistance using Superposition theorem.	CO 1	3
	48Ω 48Ω $6 A$ $R = 16 \Omega$		
	E Dute Each Question Carries 5 Marks	CO	BL
Q. No 2 (a)	Attempt Any Four Parts. Each Question current of the standard	CO 2	3
	current when $t = 0.02$ msec	CO 2	3
(b)	Derive an expression of resonance frequency in C-D-C series resonance international A series circuit contains a resistance of 4 Ω , an inductance of 0.5 H and a variable		
(c)	Explain active power and reactive power in an ac circuit. What do you understand by	CO 2	2
	power factor of an ac circuit? Explain lagging, leading and unity power factor.	CO 2	2
(d)	Define resonance in RLC Series Circuit and calculate resonant requests (1).	CO 2	2
(e)	Explain the two wattmeter method of three phase power measurement		

	A La R Marke	CO	BL
Q. No 3	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO 3	2
(a)	Discuss the principle of operation of a single phase transformer. Derive EMF equation		-
	for a single phase transformer.	CO 3	2
(b)	What are the Similarities & dissimilarities between electrical & magnetic system		
(c)	Explain with the help of a diagram the working principle of permanent magnet moving	CO 3	2
	coil (PMMC) instruments		
(4)	4.5KVA.500/250V.50Hz single -phase transformer gave the following results:	CO 3	3
(a)	A SKVA, 500/250V, 5012, single phase transformer gave the former by		
	S.C Test: 25V, 10A, 60W (L.V Side is shorted)		
	Determine its parameter		
(e)	Draw and explain the phasor diagram of a single phase transformer for an inductive	CO 3	2
	load		

O No 4	Attempt Any Two Parts Each Question Carries 10 Marks.	СО	BL
Q. NO 4	Attempt Any revorants, Eden Queensing of D C Generator	CO 4	2
(a)	Explain the Constructional details & working of D.C. Generator	CO 4	2
(b)	Why single phase induction motor is not self starting? What are the different methods	CU 4	4
(-)	of starting single phase induction motor? Explain any one of them.		
(0)	What are the various methods of speed control in three phase induction motor	CO 4	2
	what are the various meaneds of spread and a single state of the second state of the s		

0 No 5	Attempt Any Two Parts, Each Question Carries 10 Marks.	СО	BL
(a)	With the use of single line diagram explain Generalized layout of Power system	CO 5	2
(b)	What is a Molded case circuit breaker MCCB)? Explain its operating mechanism. What are its main functions?	CO 5	2
(c)	Why earthing is used ? write various types & earting methods	CO 5	2

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