Q.P. Code:**16EE4301** **R16**

Reg. No. | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
M.Tech I Year I Semester Regular & Supplementary Examinations February 2018
PRINCIPLES OF MACHINE MODELLING AND ANALYSIS
(Common to CS & PE)

Time: **3** hours Max. Marks: **60**

(Answer all Five Units **5 X 12 =60** Marks)

UNIT-I

1	a	Write the basic two pole machine representation of Amplidyne?	6M
	b	Explain in detail the concept of two pole machine representation with suitable circuit diagram?	6M
		OR	
2	a	Derive the torque equations of Kron's Primitive machine?	6M
	b	Write the basic two pole machine representation of DC shunt machine with Interpoles?	6M

UNIT-II

3		Explain the generalized mathematical model of the DC shunt motor?	6M
		Explain the generalized mathematical model of the DC series and shunt motor?	6M
		OR	
4	a	Explain the concept of sudden application of Inertia Load?	6M
	b	Explain the concept of Linearization Techniques for small perturbations?	6M

UNIT-III

5	a	Explain the transformation from three phase to two phase and vice versa in detail?	6M
	b	Explain the signal flow graph of the induction machine per unit model?	6M
		OR	
6		Explain the d-q model of induction machine in Stator reference Frame?	6M
		Explain the mathematical model of Induction machine?	6M

UNIT-IV

7	a	Explain the Space phasor (d-q) model of synchronous Machine?	6M
	b	Write the importance of synchronous machine inductances?	6M
		OR	
8	a	Explain the Steady state operation of synchronous Machine?	6M
	b	Write the Comparison between single phase and poly -phase induction motor?	6M

UNIT-V

9	a	Explain the Operating principle of Switched Reluctance Motor?	6M
	b	Explain the Construction and functional Aspects of Switched Reluctance Motor?	6M
		OR	
10		Explain the commutation windings and SRM modeling with suitable circuit diagrams?	12M

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