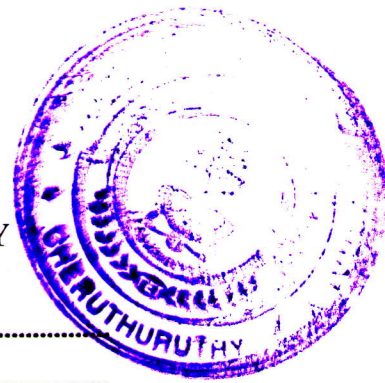


APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
08 PALAKKAD CLUSTER



6232-May-1

(Pages: 2)

Name

Reg. No:.....

SECOND SEMESTER M.TECH. DEGREE EXAMINATION MAY 2017

Branch: Electrical and Electronics Engineering

Specialization: Power Electronics

08EE6232 ADVANCED ELECTRIC DRIVES

Time:3 hours

Max. marks: 60

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

Q.no.	Module 1	Marks
1.a	Draw the block diagram of dynamic modelling of Induction Motor.	3
	Answer b or c	
b	Derive the expression for three phase to two phase transformation of Induction machine.	6
c	Obtain the torque equation in terms of modified flux linkages and currents.	6
Q.no.	Module 2	Marks
2.a	What is the principle of Vector control of Induction motor?	3
	Answer b or c	
b	Write the algorithm for vector control. Explain the block diagram of direct vector control of Induction motor.	6
c	Derive the expression for the Indirect vector control from dynamic equations of Induction machine.	6
Q.no.	Module 3	Marks
3.a	What is the principle of flux weakening?	3
	Answer b or c	
b	Explain briefly the Modified Reactive power compensation and Parameter Compensation with air gap power feedback control.	6
c	Design a speed controller for an Indirect Vector controlled Induction Motor.	6

Q.no.	Module 4	Marks
4.a	What is a Static Scherbius drive?	3
Answer b or c		
b	Describe about the doubly fed machine speed control by rotor rheostat.	6
c	Discuss about Static Karmar Drive and obtain the Torque expression for it.	6

Q.no.	Module 5	Marks
5.a	Compare Direct torque control and Field oriented control of induction motor	4
Answer b or c		
b	Discuss in detail about the principle of operation of direct torque control.	8
c	What is Space vector modulation? Explain.	8

Q.no.	Module 6	Marks
6.a	Derive the power output power ratio of a PMSM.	4
Answer b or c		
b	Develop the model of PMSM, with the help of phasor diagram and necessary equations.	8
c	Discuss the operation of Sensorless PMSM drive.	8