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## P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

## Seventh Semester, B.E. - Industrial and Production Engineering Semester End Examination; Dec. - 2015 Mechatronics

Time: 3 hrs Max. Marks: 100

Note: i) Answer any FIVE full questions, selecting at least TWO full questions from each part. ii) Assume missing data if any.

## PART - A

	PART - A						
1 a.	Define Mechatronics. Explain the multidisciplinary scenario of Mechatronics.	8					
b.	. Explain briefly the evolution of Mechatronics.						
c.	. With neat diagram explain the working principle of automatic washing machine.						
2 a.	a. What are transducers? Briefly discuss the light sensors.						
b.	Explain with a neat sketch Hall effect sensor.	8					
c.	c. Write a note on pneumatic sensors.						
3 a.	a. What are logic functions? Briefly explain all the logic along with circuit diagram standard symbol and truth table.						
b.	b. What is digital controller?						
c.	e. Write a note on BCD representation.						
4 a.	. With a neat diagram explain 8085A microprocessor architecture.						
b.	Explain the following:	0					
	(i) CPU (ii) ALU (iii) Data engines (iv) Memory address	8					
	PART - B						
5 a.	a. What is stick slip phenomenon? Discuss briefly.						
b.	b. What is preloading of bearing? Briefly explain and fluid bearing with heat sketches.						
c.	c. Write a note on antifriction guide ways.						
6 a.	Explain the following solid state switches:	0					
	i) Diodes (ii) Thyristors (iii) Juicer	8					
b.	Briefly explain the construction and working principle of DC motors.	8					
c.	e. Write a short note on stepper motor.						
7 a.	. What are the pressure control value and explain the application of pressure sequence value.						
b.	b. With a neat diagram explain permanent magnet stepper motor						
c.	Write a short note on hydraulic actuator.	4					
8.	Write a short note on:						
	a) Multiplexer b) Data acquisition	20					
	c) Signal processing d) Filters.						