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Sixth Semester B.E. Degree Examination, Dec.2017/Jan 2018

Mechatronics and Microprocessor

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

		PART - A
1	9	Define mechatronics. State the major differences between conventional and mechatronic
•	u.	product design approach (08 Marks)
	b.	What is sequential controller and explain with a block diagram the working of domestic
	0.	washing machine. (12 Marks)
2	a.	Explain how sensing is achieved by an incremental optical encoder. (08 Marks)
	b.	Explain the following performance terminologies of transducers:
		i) Accuracy iii) Drift iii) Repeatability iv) Speed of response (06 Marks)
	c.	Explain the principle of operation of Hall effect sensor. (06 Marks)
		^

2	0	Differentiate between a mode invisionaliminalistori	(06 Mark	,
3	a.	Differentiate between a diode, thyristed and the state How it is	ugad f	or
	h	Explain the working principle of a permanent magnet D.C. motor. How it is	useu 1	.01
	U.	Explain the working printing	108 Mark	(2)
		positive control drives?	,	
		Sketch and explain the working of an stepper motor.	(08 Mark	(S)
	C.	Sketch and explain the working of all stepper motor.		

1	9	What is the significance of operational amplifier? How it is used in an	n inverting amplifier
+	a.	oirquit?	(10 Marks)
	1.	circuit? What is multiplexer and de multiplexer? Where they are used?	(06 Marks)
	D.	what is multiplexer and against plexer.	(04 Marks)

c. Write a note on digital signal processing.

With the help of a block diagram, explain briefly the general form of a microprocessor 5 (08 Marks) What are logic gates? Discuss AND and OR gates with their truth tables for two inputs. b.

PART - B

Write a note on representation of real numbers.

(08 Marks) (04 Marks)

Explain in detail with a block diagram, the architecture of Intel 8085 A microprocessor. (10 Marks)

What are micro controllers? Explain the general form of a micro controller.

(10 Marks)

a. Explain the classification of instructions for the Intel's 8085 microprocessor.

(19 Marks)

With a neat flow chart, discuss the programming process.

(10 Marks)

Distinguish between instruction cycle, machine cycle and T-state.

(10 Marks)

Draw and explain the timing diagram for opcode fetch operation.

(10 Marks)