Seat No.

[5352]-550

S.E. (ELECTRICAL) (II Sem.) EXAMINATION, 2018 FUNDAMENTALS OF MICROCONTROLLER AND ITS APPLICATIONS (2015 Pattern)

Time: Two Hours

Maximum Marks: 50

- N.B. :— (i) Attempt Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4, Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 8.
 - (ii) Figures to the right indicate full marks.
 - (iii) Neat diagram must be drawn wherever necessary.
- 1. (a) Explain clearly the differences between Microcontroller and Microprocessor. [6]
 - (b) Explain the addressing modes of 8051 with example. [6] Or
- 2. (a) Compare different family members of MCS-51 family. [6]
 - (b) Explain the following instructions with example.
 - (i) SJMP
 - (ii) DJNZ
 - (iii) MUL AB.
- 3. (a) Write an assembly language program to multiply 2 numbers stored at memory location C000 H and C001 H. Store the answer in D000H and D001 H. [6]
 - (b) Write a note on the different interrupts available in 8051. [7]

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[6]

4.	(a)	Write an assembly language program to find smallest number
		from an array of 5 numbers stored at memory location 6000
		H and store the answer in 1000 H. [6]
	(<i>b</i>)	Write the steps taken by CPU to transfer data serially.[7]
5 .	(a)	Explain the function of the following Microcontroller tools:
		(i) Assembler
		(ii) Simulator
		(iii) Emulator. [6]
	(<i>b</i>)	Write down the steps to program ADC 0809. Also draw the
		interfacing diagram with 8051 Microcontroller. [6]
		Or
6.	(a)	Explain the control word format of 8255 PPI. Write the control
		word to program all ports as output ports. [6]
	(<i>b</i>)	Interface DAC 0808 with 8051 Microcontroller. Write program
		to generate sawtooth waveform. [6]
7 .	(a)	With the help of block diagram, show how temperature can
		be measured using 8051. [6]
	(<i>b</i>)	Draw circuit diagram and write program for relay interfacing
		using 8051. (7)
		Or
8.	(a)	With the help of block diagram, show how power factor can
•		be measured using 8051. [6]
	(<i>b</i>)	Draw an interfacing diagram and write program for speed control
		of a stepper motor. [7]
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		of a stepper motor. [7]
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