T.E (Instru) choice Based
Sem - V

(3 Hours) [Total Marks: 80]

22/11/18

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N.B.:

1) Question no.1 is compulsory.
2) Attempt any **three** questions out of remaining **five** questions.
3) Assume suitable data if necessary.
4) Figure to right indicate full marks.

1		Answers the following questions (Attempt any FIVE)	20
	a	Define Embedded system. Explain the characteristics of embedded system?	
	b	Compare microprocessor and microcontroller with example.	
	c	Write a program to divide two 8 bit numbers. In which register the quotient and reminder will be stored?	
	d	Explain in brief the structure of TMOD and TCON.	
	e	Draw a block diagram of 8051 based digital weighing machine.	
	f	Write any eight important features of 8051 microcontroller.	
2	a	Write a program to convert BCD number to ASCII number.	8
	b	Draw and explain the architecture of 8051 microcontroller.	8
	c	Explain the on chip memory organization of 8051	4
3	a	Draw and interfacing diagram to interface Digital to Analog Converter (DAC) to 8051 and write a program to generate triangular waveform.	10
	b	Draw and Interfacing a 16 x 2 LCD to 8051 and write a program to display your name or the same	10
4	a	Write a program to transmit 'WELCOME' on serial communication port of 8051 with baud rate of 4800 and crystal frequency of 11.0592 MHz.	10
	b	Write a program to generate a square wave on the port pin P1.1 of 8051. Assume suitable data.	10

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5 a Draw an interfacing diagram to interface 4KB of RAM to 8051. 10
      Which interfacing signals are required and why?

   b Explain with block diagram traffic light controller design with 10
      8051.

6 a Show how to interface an ADC to 8051 with suitable diagram and 10
      the programming procedure.

   b How to design Data Acquisition System with 8051 10
      microcontroller? Justify the requirement of the various components
      of the system.

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