

Printed Pages : 3



EEC014

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 131654

Roll No.

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B. Tech.

(SEM. VI) THEORY EXAMINATION, 2014-15
MICROCONTROLLERS

Time : 2 Hours]

[Total Marks : 50

Note : All questions are compulsory.

- 1 Attempt any two parts : 5×2=10
- (a) What is the difference between Harvard architecture and Von-Neuman computer architecture ?
 - (b) Discuss 8051 programming model with a block diagram?
 - (c) Name the addressing modes of the following instructions :
 - (i) MOVC A,@A+DPTR
 - (ii) MUL AB
 - (iii) MOV B, #04H
 - (iv) SUBB A, 45H
 - (v) DAA

131654]

1

[Contd...

2 Attempt any two parts : 5×2=10

- (a) Explain the memory organization in 8051 controller.
- (b) What is stack? Explain with examples the PUSH and POP instructions.
- (c) Write an assembly program in 8051 to add two 16 bit numbers stored in external memory. After addition store the results in internal data memory.

3 Attempt any two parts : 5×2=10

- (a) Name the interrupts of 8051. How can they be enabled and disabled? How priority can be assigned?
- (b) Explain in detail about SBUF and SCON reg.
- (c) With a suitable block diagram explain the all timer mode and discuss the programming of mode 1 timer.

4 Attempt any two parts : 5×2=10

- (a) Assume that IP register has all 0s. Explain what happens if both INT0 and INT1 are activated at the same time.
- (b) Write a program to generate a triangular waveform using DAC.
- (c) Write a program to control AC :
Port 1 is connected to the temperature sensor. Microcontroller reads temperature sensor every 5 second. Port 3 pin 1 is connected to the air conditioner. Turn on A.C. if temperature is greater than 22 degree Celsius. (Turn on A.C. output port 1 and Turn off A.C. Output port 0).

5 Attempt any two parts :

5x2=10

- (a) Explain about MC68HC11 microcontroller.
- (b) Design a counter for counting the pulses of an input signal. The pulses to be counted are fed to pin 3.4. XTAL = 22MHz.
- (c) Using interface of 8255 PPI with MC 8051: Write a program to generate a square wave at bit 0 of port C.