

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

PAPER ID : 2620

Roll No.

--	--	--	--	--	--	--	--	--	--	--

B. Tech.

(SEM. VI) THEORY EXAMINATION 2010-11

MICROCONTROLLER AND EMBEDDED SYSTEM

Time : 2 Hours

Total Marks : 50

- Note :** (1) Attempt **all** questions. All questions carry equal marks.
(2) Be precise in your answer. No. second answer book will be provided.

1. Attempt any **two** parts of the following : **(5×2=10)**
 - (a) How does a microcontroller differ from a microprocessor ? Why microcontrollers are preferred over microprocessors in control applications ?
 - (b) Discuss the different power-saving modes of 8051.
 - (c) Explain pin diagram of 8051.

2. Attempt any **two** parts of the following : **(5×2=10)**
 - (a) List five assembler directives and explain their meaning for the assembler of 8051.
 - (b) Show the code to push R5, R6 and A onto the stack and then pop them back into R3, R4 and B, where register B = register A, R3 = R6, and R4 = R5.

- (c) Write program to send 44 H to ports P1 and P2, using (a) their addresses (b) their names.
3. Attempt any **two** parts of the following : (5×2=10)
- (a) With the aid of a block diagram explain the operation of an 8051 UART device. Initialize the serial port to transmit an 8-bit data.
- (b) With the oscillator frequency 11.0592 MHz, find the TH1 value needed to have the following baud rates 9600, 2400 and 1200.
- (c) Explain the interrupt handling mechanism of 8051.
4. Attempt any **two** parts of the following : (5×2=10)
- (a) With a schematic diagram explain how an 8051 is interfaced with external RAM ?
- (b) Write a program to interface ADC to 8051.
- (c) Write a program to interface an LCD to 8051.
5. Attempt any **two** parts of the following : (5×2=10)
- (a) Describe 8096 microcontroller with the help of block diagram.
- (b) Give the main features of 68HC11A8 microcontroller. Also explain analog to digital converter of 68 HC11.
- (c) Write a program for stepper motor control using 8255.