(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 band 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.