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SE-6829

B. E. III (Sem. V) Examination

April / May – 2011

Microprocessor Programming & Interfacing

(Instrumentation & Control)

Time : **3** Hours] [Total Marks : **100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. 3 (Sem. 5)**

Name of the Subject :

☛ **Microprocessor Programming & Interfacing**

☛ Subject Code No. : **6 8 2 9** ☛ Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

(2) Attempt all questions.

(3) Figure to the **right** indicates marks.

1 (a) Give the answers in brief. **10**

(i) What are T states ?

(ii) Define Machine cycle.

(iii) List the control signals in 8085.

(iv) What is the function of S1 and S0.

(v) State the two 16 bit registers of 8085.

(b) Explain the following pin functions : 8

$READY$

$\overline{WR}$

ALE

$\overline{INTA}$

2 (a) Sketch and explain the signal diagram of 8085. 8

(b) What is a microprocessor ? Sketch and explain the various pins of 8085. 8

OR

2 (a) Explain with schematic diagram how separate address, data signals can be generated from 8085 common address-data lines. 8

(b) Give a general block diagram of a microprocessor based system. Explain briefly the various blocks of the system. 8

3 Answer any **two** : **16**

(a) Explain memory classification with a chart.

(b) Explain what is key bouncing and debouncing.

(c) Interface the following memory to 8085 :
ROM : 2Kx 8-bit, using 2716, starting address : 0000h

4 (a) Give the answers in brief : **10**

(i) Where is DMA used ?

(ii) Explain the following instruction
ORA

(iii) What is the function of stack ?

(iv) What is a subroutine ?

(v) When is auxiliary carry set ?

(b) Explain the internal block digram of 8255A. **10**

5 (a) A pushbutton keyboard is connected to PORT A and a seven segment LED is connected to PORT B of 8255A. PORT A should be configured as input and PORT B as output port. Draw the interfacing diagram with 8085. 8

(b) Write a program for the interfacing of Q-5 (a) to read the number of key pressed on keyboard. 8

OR

5 (a) Interface 7 segment LED to PORT B of 8255A and draw its interfacing diagram with 8085. 8

(b) For the interfacing diagram of Q-5(a), write code to display '2' on the LED. 8

6 Attempt any **two** questions : **16**

(a) For a crystal frequency of 2 Mhz. Write s subroutine to generate 1 second delay.

(b) Assume that 10 data bytes are stored from memory location starting from C100h. Write an assembly language program to copy these data bytes to memory location starting from C300h.

(c) Write an assembly language program to convert a hexadecimal number into its decimal equivalent number.