Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 41211

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Sixth Semester

Electrical and Electronics Engineering

EC 1301 – MICROPROCESSOR AND MICROCONTROLLER

(Common to Electronics and Instrumentation Engineering, Instrumentation and Control Engineering and Fifth Semester Electronics and Communication Engineering)

(Regulation 2008)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. Find out the status of 8085 flags after the addition of CEH and 9BH.
2. Find the addressing modes of the given 8085 instructions:
   (a) LxI H_1 4500H
   (b) RAL.
3. State the use of scan lines and return lines in 8279 keyboard / display controller.
4. Mention the maximum data flow rate and modes of operation of RS 232C.
5. Specify the physical memory size and segmented memory size of 8086 microprocessor.
6. Write the result after the execution of following instructions:
   MOV AX, 8796H
   MOV CL, 02H
   ROR AX, CL
7. State the function of 8051 micro controller signals:
   $\overline{PSEN}$, $\overline{EA}$
8. What is the functions of 8051 registers DPTR, PC?
9. Write the 8051 instruction to perform the given operation:
   Move the contents of RAM memory location 55H to port 1.
10. Which addressing mode is suitable for lookup table access in 8051?

PART B — (5 × 16 = 80 marks)

11. (a) (i) List the various registers of 8085 and explain their function. (8)

(ii) Draw and explain the timing diagram for opcode fetch operation. (8)

Or

(b) (i) Write an assembly language program using 8085 instructions to divide two 8 bit numbers. (8)

(ii) Show the interfacing of memory with 8085 and explain the read / write operation with control and status signals (8)

12. (a) Write the features of 8251 USART. Explain how data can be transformed and received using 8251 USART at different baud rates. (16)

Or

(b) (i) Show the interfacing of ADC to 8085 and explain the procedure to convert analog input to digital. (8)

(ii) Describe the serial communication using I^2C bus. (8)

13. (a) Write the classification of 8086 instruction based on functions. Explain the different instructions with examples. (16)

Or

(b) (i) Write 8086 based assembly language program to compute y = n!/(n-r)! r !. (8)

(ii) Draw and explain the schematic block diagram of 8086. (8)

14. (a) Explain in detail the function of general purpose and special purpose registers of 8051 micro controller. (16)

Or

(b) (i) Explain the various timer modes of 8051 micro controller. (8)

(ii) Discuss about 8051 serial communication and interrupts. (8)

15. (a) (i) Discuss about the addressing modes of 8051 with examples. (6)

(ii) Show the diagram for keyboard interface with 8051 and write a program for reading a key. (10)

Or

(b) Explain in detail the programming of the given 8051 peripherals:

(i) Interrupt (6)

(ii) Timer (6)

(iii) I/O ports (4)