R13

Code No: 126AK

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, May - 2017

MICROPROCESSORS AND INTERFACING DEVICES

(Electrical and Electronics Engineering)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a) What are the different resisters of 8086? [2]
b) What are memory addresses? [3]
c) What are instruction formats? [2]
d) Define addressing mode. [3]
e) What are static memories? [2]
f) Define vector interrupt table. [3]
g) Give bit format used for sensing asynchronous serial data. [2]
h) Mention 8251A USART pin descriptions. [3]
i) What is the importance of jump instructions in assembly language programming for 8051? [2]
j) What is the significance of program status word(PSW) register of 8051 microcontroller. [3]

PART – B

(50 Marks)

2.a) Explain 8086 architecture with neat diagram.
b) How do you generate delays in software? What are the limitations of this method of generating delays ? How will you synchronize one such delay with an external process? [7+3]

OR

3.a) Draw and discuss a typical minimum mode 8086 system.
b) Explain Interrupt structure of 8086. [6+4]

4.a) Write an ALP to convert a four digit hexadecimal number to decimal number.
b) Write an ALP to find out transpose of 3 × 3 matrix. [5+5]

OR

5. Use the 8086 string instructions to write a program which scans a string of 80 characters looking for carriage return (0DH). If a carriage return is found, put the length of the string upto the carriage return in AL. If no carriage return is found, put 50H (80 decimal) in AL. [10]

6.a) Explain internal architecture of 8255.
b) Explain keyboard interfacing with 8086. [4+6]

OR

7.a) Explain stepper motor interfacing with 8086 generating clockwise and anticlockwise rotations.
b) Describe the functional diagram of 8259. [6+4]

8.a) Explain serial communication standards.
b) Explain the IEEE-488 with the schematic diagram. [5+5]

OR

9.a) Describe serial data transfer schemes.
b) Draw a diagram showing the list format used for asynchronous serial data. Label the start, stop and parity bits. Number the data bits to show the order of transmission. [7+3]

10.a) Explain the I/O ports structure of 8051.
b) Discuss the different SFRs of 8051. [4+6]

OR

11.a) Explain different addressing modes of 8051.
b) Explain the each bit of TCON and PCON of 8051. [6+4]

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