

Roll No

EX - 502

B.E. V Semester

Examination, December, 2012.

**MICROPROCESSOR AND
MICROCONTROLLER**

Time : Three Hours

Maximum Marks : 70/100

- Note:* (1) Attempt *one* question from each unit.
(2) All questions carry equal marks.

UNIT - I

1. (a) With the help of block diagram explain the architecture of 8086.
(b) What are the various interrupts available in 8086? Distinguish between maskable and non maskable interrupts. Also explain the interrupt vector table of 8086.

OR

2. (a) Why segmentation is done? Name the segment registers 6 and explain their functions. Also discuss general purpose registers of 8086.
(b) What is the difference between maximum mode and minimum mode operation of 8086? Explain in detail the working of 8086 in both the modes.

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UNIT - II

3. (a) Explain the following instructions clearly
- (i) XCHGBL, CH
 - (ii) ADDAL, BL
 - (iii) IMUL AX
 - (iv) DIV BL
- (b) Name all the addressing modes of 8086. Explain them with examples.

OR

4. (a) What is a stack? Discuss stack structure of 8086 and also explain stack related operations in detail.
- (b) Write a program in 8086 assembly language to add given numbers of data in a series.

UNIT - III

5. (a) Explain I/O mapping and memory mapping. What is the use of both the types of mapping? Discuss.
- (b) What are the different control signals used by 8255 PPI? Explain the BSR mode of operation of 8255.

OR

6. (a) Describe all the operating modes of 8254.
- (b) Explain cycle stealing and demand transfer mode of 8257.

UNIT - IV

7. (a) Name and explain registers and flags of 8051.
- (b) What do you understand by interrupts? Give interrupt structure of 8051 and discuss interrupt priorities.

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OR

8. (a) Describe in detail memory organization of 8051.
- (b) Classify and explain instruction set of 8051.

UNIT - V

9. (a) How stepper motor interfacing is done with 8051? Explain in detail with diagram.
- (b) Name and explain serial communication modes. Also discuss 8051 serial communication.

OR

10. (a) Draw the circuit diagram of 8051 based thyristor firing circuit and explain its working.
- (b) Describe 8051 interfacing to ADC and DAC.

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