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**Question Paper Code : 51380**

**B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016**

**Fourth Semester**

**Computer Science and Engineering**

**CS 2252/CS 42/EC 1257/080250010/10144 CS 403/10144 EC 506 – MICROPROCESSORS  
AND MICROCONTROLLERS**

**(Common to Information Technology)**

**(Regulations 2008/2010)**

**(Also common to PTCS 2252/10144 EC 506 – Microprocessors and Microcontrollers for  
B.E. (Part-Time) Fourth Semester – Computer Science and Engineering – Regulations  
2009/2010)**

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer ALL questions.**

**PART – A (10 × 2 = 20 Marks)**

1. List the special purpose registers in 8085 CPU and mention their usage.
2. Write an 8085 assembly language program to find the 1's complement of 3 numbers stored in memory.
3. What address in the interrupt vector table, are used for a Type-2 interrupt in 8086?
4. Why do we use macros ?
5. Justify the need for coprocessor.
6. Justify – Coprocessor can fetch and execute the instructions.
7. What is bus stealing ?

8. What are the operating modes of 8255 ?
9. What is Baud rate for mode 0 operation of the serial port of 8051 ?
10. In the program status word of 8051, the bits RSO and RS1 are 1 and 0, then which register bank is selected for operation ?

**PART – B (5 × 16 = 80 Marks)**

11. (a) Draw the 8085 architectural diagram and explain the various units available in it.

Or

- (b) (i) With the suitable examples, explain the instruction types of 8085 processor. (8)
- (ii) Write an 8085 ALP for sorting an array of numbers in the ascending order. (8)

12. (a) (i) Draw the internal architecture of 8086 microprocessor and explain its Bus Interface Unit (BIU). (8)
- (ii) Give an example for the 8086 instructions: AAA, CWD, JNBE, LAHF, MOVS, RCL, ROL and SAHF. (8)

OR

- (b) (i) What is the use of the following assembler directives: DD, ENDS, EVEN and EXTRN. (8)
- (ii) Explain the 8086 Interrupt types with an example. (8)

13. (a) Explain the architecture of 8087 numeric data processor. (16)
- (b) (i) Differentiate closely coupled configuration and loosely coupled configuration. (6)
- (ii) Explain the architecture of 8089 I/O processor. (10)

14. (a) (i) Explain the mode 1 operation of 8255 Programmable Peripheral Interface. (8)  
(ii) Explain the different modes of operation of a timer. (8)

**OR**

- (b) Explain the basic working principle of a stepper motor and write an assembly language program interface the stepper motor to the microprocessor. (16)

15. (a) (i) Describe the functions of the signals present in 8051. (10)  
(ii) How a DAG is interfaced with 8051? (6)

**OR**

- (b) (i) Explain how an LCD and keyboard is interfaced with 8051. (12)  
(ii) Describe about serial port interface of 8051. (4)