Fourth Semester B.E. Degree Examination, Dec.2013/Jan.2014
Microprocessors

Time: 3 hrs. Max. Marks:100

Note: ***Answer FIVE full questions, selecting at least TWO questions from each part.***

PART – A

1 a. Explain the memory structure of Intel personal computer in detail with neat schematic. **(08 Marks)**

b. Briefly explain various multipurpose registers in 8086. **(06 Marks)**

c. What is real mode addressing? Explain default segment and offset registers. **(06 Marks)**

2 a. Illustrate the memory paging mechanism in the 80386 microprocessor with suitable schematic. **(06 Marks)**

b. Briefly explain various addressing modes of 8086 with suitable examples. **(10 Marks)**

c. What do the following MOV instructions accomplish?

```
MOV RAX, RCX
MOV ESP, [BSP]
MOV AX, 2341H
MOV CS, AX
```

(04 Marks)

3 a. Write and explain machine code for instruction MOV DL, [BX] **(10 Marks)**

b. Describe the operation of each of the following instruction in brief:
·PUSHF ·MOVS ·LAHF ·DIV ·XCHG **(05 Marks)**

c. What is segment override prefix? Illustrate the same with an example. **(05 Marks)**

4 a. Explain with an example how multiple if then else statement can be implemented using ALP. **(10 Marks)**

b. Differentiate between short, near and far jump instructions with two examples of each. **(10 Marks)**

PART – B

5 a. Illustrate a simple program that uses a character string defined with and display on a separate line. **(10 Marks)**

b. Differentiate between:
(i) Assembler and linker (ii) Public and EXTRN (iii) Macros and Procedure. **(06 Marks)**

c. Write an ALP to compute factorial of single digit positive number using recursive procedure. **(04 Marks)**

6 a. Explain minimum mode PINS of 8086 and minimum mode configuration of 8086 with neat diagram. **(10 Marks)**

b. Describe internal block diagram of 8288 Bus controller with explanation of each pins. **(06 Marks)**

c. With neat timing diagram, explain the I/O read operation. **(04 Marks)**

7 a. With neat diagram, explain simple NAND gate address decoding logic. **(10 Marks)**

b. Differentiate between Memory mapped I/O and direct I/O. **(05 Marks)**

c. Briefly explain handshaking or polling with necessary diagrams. **(05 Marks)**

8 a. Explain pin-out of 82C55 along with different operational modes. **(10 Marks)**

b. Explain the structure of 8086 interrupt vector table with a neat diagram. **(10 Marks)**

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