

M.C.A. DEGREE I SEMESTER EXAMINATION, NOVEMBER 2009

CAS 2104 COMPUTER ORGANIZATION

(Old Scheme)

Time: 3 Hours

Maximum marks : 50

PART - A

(Answer **ALL** questions)

(Each question carries **TWO** marks)

(15 x 2 = 30)

- I. (a) What is single precision format? How would the number 5.125_{10} be stored in single precision format?
 (b) In two's complement representation what would the number 10000111 represent?
 (c) Draw a diagram of a clocked R-S-flip flop using NAND gates.
- II. (a) List the arithmetic operations NOT performed by ALU: Which unit is responsible for doing the operations?
 (b) What is the purpose of Index Register?
 (c) What is meant by "double-pumping" in connection with memory of a computer?
- III. (a) What are programmable and non-programmable ports?
 (b) What are bus speed and bus band width? How they are connected?
 (c) What is cycle stealing?
- IV. (a) What is relocatable object code?
 (b) Draw and explain IA-32 instruction format.
 (c) Give an example of base with displacement mode in the IA-32 architecture.
- V. (a) What are assembler directives? Give examples.
 (b) How subroutines are written in assembly language?
 (c) What is the role of linker in program execution?

PART - B

(Each question carries **FOUR** marks)

(5 x 4 = 20)

- VI. A. Discuss IEEE floating point formats.
 OR
 B. Draw and explain the operation of an asynchronous binary up-counter.
- VII. A. What is the principle of dynamic memories? Explain the working of a dynamic memory chip.
 OR
 B. List and explain various ALU operations.
- VIII. A. What is an interrupt? Explain interrupt control mechanisms.
 OR
 B. Explain the organization and working of a magnetic hard-disk.
- IX. A. List and explain major groups of instructions of a 32 bit processor.
 OR
 B. List and explain different types of registers of a 32 bit processor.
- X. A. Write an assembly program to sum all even numbers of an array.
 OR
 B. Write an assembly program to search a given integer in an array.