M.C.A. DEGREE I SEMESTER EXAMINATION, NOVEMBER 2008

CAS 2104 COMPUTER ORGANIZATION

(New Scheme)

Time : 3 Hours | Maximum Marks : 50

PART – A

(Answer ***ALL*** questions)

(All questions carry ***EQUAL*** marks)

(15 x 2 = 30)

I. (a) Convert $(952.756)_{10}$ to binary number system.
(b) Distinguish between ASCII and EBCDIC codes.
(c) Draw the logic circuit and truth table for the logic expression (A AND B) NOR (A AND C).

II. (a) What are condition code flags?
(b) What is a frame pointer?
(c) Differentiate between subroutine and an ISR.

III. (a) What is cache coherency?
(b) Explain floating point normalization in IEEE single precision format.
(c) List down the actions required to execute the instruction : Add (R2), R1.

IV. (a) Explain control sequences for an unconditional branch sequence.
(b) Explain basic idea behind instruction pipelining.
(c) What is RS – 232 standard?

V. (a) Give an example, and explain an 8086 implied addressing mode.
(b) Draw the format of an 8086 instruction format.
(c) Compare intel Pentium with Intel 80486.

PART – B

(All questions carry ***EQUAL*** marks)

(5 x 4 = 20)

VI. A. Convert the following pairs of decimal numbers to 5 – bit, signed, 2's complement binary numbers. Perform addition and subtraction (second number from first number). State whether or not overflow occurs in each case.

(i) – 10 and – 13
(ii) – 5 and 7
(iii) 7 and 13

OR

B. What is a mod – 5 counter? How is it built? How is a decade counter realized using mode – 5 counter?

VII. A. Discuss addressing modes of a computer with suitable examples.

OR

B. What is a bus? Discuss synchronous and asynchronous I/O operations through bus.

VIII. A. Describe the organization of a 8 m x 32 memory using 512 K x 8 memory chips.

OR

B. Draw Karnaugh map and simplify the Boolean function

$$Y(A,B,C,D) = \pi M(1,5,7,8,9,10,11,12,13,14,15)$$

IX. A. Discuss micro programmed control scheme. What is micro program sequencing?

OR

B. What are the penalties incurred on the rate of execution of Brach instructions? Discuss two ways to handle it.

X. A. Draw the block diagram of internal architecture of Intel 8086 micro processor. Explain each component.

OR

B. Write 8086 assembly program to clear 100_{10} consecutive bytes. Assume CS and DS are already initialized.

***