2011

COMPUTER ARCHITECTURE AND SYSTEM SOFTWARE

Time Allotted : 3 Hours | Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : $10 \times 1 = 10$

   i) The program that translates a high-level language program to binary is called

   a) compiler b) byte code

   c) operating system d) none of these.

   ii) There are two major types of control organization. They are

   a) Hardwared control and micro-programmed control

   b) Hardware and software

   c) Operating system and hardware

   d) System software and application software.

iii) The full form of MRI is

a) Memory reference instruction

b) Memory reference interpreter

c) Memory reference interrupt

d) None of these.

iv) The input symbolic program is called

a) Source program b) Object-program

c) Byte code d) None of these.

v) The data register is sometimes called

a) Pipeline register b) Buffer

c) Compiler d) Sequencer.

vi) The full form of PSW is

a) Program status word

b) Password status word

c) Program status work

d) Password status work.

vii) The full form of RISC is

a) Reduced Instruction Set Computer

b) Register Instruction Set Computer

c) Reduced Instruction Set Component

d) None of these.

viii) 9's complement of 546700 is

a) 453299 b) 483270

c) 32955 d) 669290.

ix) The 2's complement of 1101100 is

a) 0010100 b) 11001100

c) 11111111 d) 11110000.

x) The full form of MAR is

a) Memory Address Register

b) Memory Address Routine

c) Memory Adder Register

d) Multiplexer Adder Register.

GROUP – B
(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. Establish the concept of three state lens buffer

3. Describe the working principle of binary incrementer.

4. What is OP code ? What is instruction code ? What is Assembler ? $1 + 2 + 2$

5. What is locality of reference ? What is biased exponent ? $2 + 3$

6. Discuss the memory read and memory write operations.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Describe the rules of the language ? What do you mean by subroutine ? What is binary adder ? 9 + 3 + 3

8. What is parallel processing ? Describe the working principle of pipelining. Explain the major characteristics of an RISC processor. 2 + 10 + 3

9. Write the applications of vector processing. Explain memory interleaving. 5 + 10

10. a) Perform the subtraction with following unsigned decimal number by taking the 10's complement of the subtrahend.

    5250 – 1321

    b) Perform the subtraction with the following unsigned binary number by taking the 2's complement of the subtrahend.

    11010 – 1101

    c) Explain asynchronous mode of data transfer. 5 + 5 + 5

11. Write short notes on any *three* of the following : 3×5

    a) Memory stack

    b) Addressing modes

    c) Program interrupt

    d) Data dependency

    e) Content Addressable Memory (CAM).