S.E. 2012 (Computer Engineering)
Computer Organization
(Semester -II)

Time: 2Hours   **Max. Marks : 50**

Instructions to the candidates:
1) Answers Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
2) Neat diagrams must be drawn wherever necessary.
3) Figures to the right side indicate full marks.
4) Use of Calculator is allowed.
5) Assume Suitable data if necessary

Q1) a) Using Booth's algorithm multiply the following   [6]
         Multiplicand = 7, Multiplier = 3
     b) Explain IEEE 488 format for single precision and double precision floating point   [6]
         numbers with example.

<div align="center">OR</div>

Q2) a) Explain the various speeds up techniques of processor   [4]
     b) Explain following addressing modes of 8086 with suitable examples   [8]
         a. Index Addressing
         b. Register Indirect
         c. Auto Increment
         d. Relative Addressing

Q3) a) Draw flowchart for Non restoring Division algorithm   [6]
     b) Write control sequence for execution of the instruction   [6]
         Add (R3), R1

<div align="center">OR</div>

Q4) a) Explain the Key components of the front end of the Intel Nehalem architecture.   [6]
     b) What are the different design methods for Hardwired control units? Explain any   [6]
         one.

Q5) a) Explain cache mapping techniques with example   [6]
     b) Explain Intel Nehalem memory organization with diagram   [7]

<div align="center">OR</div>

Q6)   Write short Notes (Any Three)   [13]
         DDR3 Memory
         NUMA

<div align="center">1</div>

USB Packet Format
PCI Bus

Q7) a) Draw and explain block diagram of itanium processor [6]
   b) Write short note on [7]
      1. i7 Mobile Version
      2. Instruction format of IA-64 architecture

<div align="center">OR</div>

Q8) a) Explain the architecture of CBE processor with the help of block diagram [6]
   b) Write short note on [7]
      1. Sun UltraSparc T1
      2. NVIDIA GPU