DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
B.TECH. SEMESTER IV [Information Technology]
SUBJECT: (IT-402) Computer Organization

Examination : Block Sessional **Seat No. :**
Date : 29/03/2012 **Day :Thursday**
Time : 10 to 11 **Max. Marks : 36**

INSTRUCTIONS:

1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Q.1 Do as directed. **[12]**

a For mesh interconnection structure find number of edges, max node degree, max inter node distance, where n=32. **[2]**

b What is age register? **[2]**

c Convert the following 32 bit IEEE-754 format to decimal: 3F800000H. **[2]**

d What are the step involved in addition of two floating point numbers X and Y $X=2.61200111 \times 10^{17}$ and $Y=1.04799245 \times 10^{21}$. **[2]**

e What are the difference between hardwired and microprogramming? **[2]**

f Explain CAD with flow chart for design process. **[2]**

Q.2 Answer the following questions. **[12]**

a **(I)**Find the product of two numbers X and Y where X= -11 and Y= -6 using Booth's algorithm. **[4]**

(II) Define: (I) Truncation (II) Rounding. **[2]**

b **(I)**Explain the technique by using that we can reduce the size of control memory. **[4]**

(II) TLB is sometimes referred to as an address cache. Justify. **[2]**

Q.3 (a) **(I)**An instruction is stored at location 300 with its address field at location 301.the address field has the value 400.A processor register R1 contains the number 200.Evalute the effective address if the addressing mode of the instruction is (a)Direct; (b) Immediate ;(c) relative ;(d) register indirect; (e) index with R1 as the index Register. **[4]**

(II) Define(I)Page(II)Page Frames **[2]**

Q.3 (b) **(I)** Explain 2901 bit slice ALU with diagram **[4]**

(II) Give the names of register level components. **[2]**