

Code: CSCS1T3

PVP 12

I M.Tech-I Semester-Regular Examinations-March 2014

**COMPUTER ORGANIZATION AND ARCHITECTURE
(COMPUTER SCIENCE & ENGINEERING)**

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

- 1 a) Simplify the Boolean function F in Products of Sum form
 $F(A,B,C,D) = \sum(0,2,8,9,10,11,14,15)$ 7 M
- b) Perform the arithmetic operations $(+42) + (-13)$ and $(-42) - (-13)$ in binary using signed-2's complement representation. 7 M
- 2 a) Design Half-adder and draw the logic diagram. Construct Full-adder using Half adder units and gates. 7 M
- b) Design a 3-bit binary synchronous counter. 7 M
- 3 a) Explain Associative memory. 7 M
- b) What is virtual memory ? Explain how it is implemented. 7 M

- 4 a) What is I/O interface? Explain how I/O devices are connected to I/O bus. 7 M
- b) Explain priority interrupt. 7 M
- 5 a) Explain Addition and Subtraction of floating point numbers. 7 M
- b) Explain Booth Multiplication algorithm with an example. 7 M
- 6 a) Explain instruction pipelining 7 M
- b) Explain 8086 instruction formats. 7 M
- 7 a) Explain RISC Architectures. 7 M
- b) Explain compiler-based register optimization. 7 M
- 8 a) Explain Cache coherence. 7 M
- b) Explain x86 multicore organization 7 M