Reg. No. : | | | | | | | | | | |

Question Paper Code: 31023

B.E. / B.Tech. DEGREE EXAMINATION, OCTOBER 2014.

Third Semester

Computer Science and Engineering

01UCS303 – COMPUTER ORGANIZATION AND ARCHITECTURE

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. State the basic functional units of a computer.
2. What do you mean by stored program concept?
3. Write the IEEE 754 binary representation of the number -0.75_{ten} in single and double precision.
4. What is Subword Parallelism?
5. What is edge-triggered clocking?
6. What is control hazard?
7. Give an example for WAW Hazard.
8. What is instruction level parallelism?
9. What is Rotation Latency?
10. What is TLB?

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Write short notes on branching and condition codes. (8)

(ii) With suitable example, explain the addition of signed numbers. (8)

Or

(b) Explain the various addressing modes with suitable examples. (16)

12. (a) Explain the MIPS Multiplication and Division process with hardware architectural diagram. (16)

Or

(b) Explain the floating point arithmetic process flow with the functional block diagram. (16)

13. (a) Explain the complete datapath functions of the multicycle implementation with architectural diagram. (16)

Or

(b) Explain how datapath can be modified to resolve hazards via forwarding. (16)

14. (a) Explain the Multiple-instruction multiple-data streams (MIMD) parallel architecture functions with suitable block diagram. (16)

Or

(b) Explain how performance efficiency is achieved by Multicore Processors. (16)

15. (a) Explain the different ways used for improving the cache performance. (16)

Or

(b) Explain in detail about virtual memory. (16)

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