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

Question Paper Code: 31233

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

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. State the truth table of 2 bit binary adder.
4. List the features of booth multiplication algorithm.
5. What is mean by hazard?
6. What is operand forwarding? When it is used?
7. Write short note about speculative execution.
8. What is multithreading?
9. Distinguish cache memory and virtual memory.
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 non–restoring and restoring division algorithms. Simulate the same for *23/5*. (16)

Or

(b) Explain the floating point addition steps and algorithm in detail. (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 concept of instruction level parallelism in detail. Discuss about the challenges. (16)

Or

(b) Discuss in detail about Flynn's classification. (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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