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

Question Paper Code: 31323

B.E. / B.Tech. DEGREE EXAMINATION, NOVEMBER 2015

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. What is an opcode? How many bits needed to specify 32 distinct operations?
2. With an example differentiate the relative address mode from indexed address mode.
3. What is a carry look ahead adder?
4. State the rule for floating point addition.
5. Differentiate between static and dynamic branch prediction approaches.
6. What are the disadvantages of increasing the number of stages in pipelined processing?
7. Define speculation.
8. What is instruction level parallelism?
9. Define the terms cache hit and cache miss.
10. Compare SDRAM with DRAM.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain the different types of addressing modes with suitable examples. (16)

Or

(b) (i) Discuss the factors influencing performance of a computer system. (8)

(ii) List and explain the different types of instructions. (8)

12. (a) Illustrate the multiplication algorithm in detail. (16)

Or

(b) Derive restoring and non-restoring division technique with an example. (16)

13. (a) What is instruction hazard? Explain the methods for dealing with the instruction hazards. (16)

Or

(b) Explain pipelined data path and control path in detail. (16)

14. (a) (i) Explain in detail about hardware multithreading. (8)

(ii) Write short notes on multicore processor. (8)

Or

(b) (i) Explain how ILP is achieved using dynamic scheduling. (8)

(ii) Explain the Flynn's classification in detail. (8)

15. (a) Explain in detail about DMA and interrupts. (16)

Or

(b) How does a virtual address get translated into physical address? Explain in detail with the neat diagram. Explain the use of TLB. (16)
