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P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belgaum)
Third Semester, B.E. - Computer Science and Engineering
Semester End Examination; Dec. - 2014
Computer Organization

Time: 3 hrs   Max. Marks: 100

Note: *i) Answer **FIVE** full questions, selecting **ONE** full question from each Unit.*
    ii) Assume suitable missing data if any.

Unit - I

1. a.	Explain the various functional units of a computer in detail with suitable sketches.	10
b.	Briefly discuss Big-Endian and Little –Endian assignments for byte addressing.	5
c.	Discuss how a subroutine works.	5
2 a.	Explain the various addressing models that are available in detail with suitable examples.	10
b.	Differentiate between CISC and RISC instruction set.	5
c.	Write a short note on performance measurement of a computer.	5

Unit - II

3 a.	Explain the concept of enabling and disabling of interrupts with examples.	8
b.	With the help of a block diagram explain the use of DMA controllers in a computer system.	7
c.	Differentiate between synchronous and Asynchronous bus.	5
4 a.	Write a short note on use of interrupts in operating systems.	5
b.	Define an exception. Explain the following concepts : (i) Recovery from errors (ii) Debugging (iii) Privilege Exception.	10
c.	Differentiate between centralized and distributed arbitration.	5

Unit - III

5 a.	Explain the concept of synchronous DRAM's in detail. (Use suitable sketches if required to explain the concept)	10
b.	Write a short note on RAMBUS memory.	5
c.	Briefly explain virtual memory with the help of a block diagram.	5
6 a.	List the different memory –Cache mapping techniques. Explain any one technique with the block diagram.	10
b.	Explain any one replacement algorithm for mapping the memory in detail.	10

Unit - IV

7 a.	Explain the Booth's algorithm in detail. Use this algorithm to multiply (-13) with (+09) [5-bit representation].	10
b.	With the help of diagram bring out the differences between Ripple – carry array and carry – save array.	10

8 a. Explain IEEE standards for floating point numbers. 10

  b. With the help of a diagram explain how floating print addition-subtraction is done. 10

Unit - V

9 a. Explain the three-bus organization of the data path with suitable block diagram. 10

  b. With the help of a neat block diagram explain the concept of a complete processor. 10

10 a. Explain the memory organization in multi-processors. 10

  b. Discuss the concept of micro instruction-sequencing organization with the help of a diagram. 10

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