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Reg. No. : .....

Name : .....

Third Semester B.Tech. Degree Examination, September 2014
(2008 Scheme)
(Special Supplementary)
08.306 : COMPUTER ORGANIZATION (RF)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions.

1. Specify the use of following registers :
   a) PC
   b) IR
   c) MDR
   d) Link Register.
2. Differentiate between system software and application software.
3. Briefly explain on passing parameters to a subroutine with an example.
4. What is distributed arbitration ?
5. Compare horizontal and vertical microinstruction format.
6. Write the control sequence for an unconditional branch instruction, using a single bus organization of CPU.
7. A block-set – associative cache consists of a total of 64 blocks divided into four-block sets.

   The main memory contains 4096 blocks, each consisting of 128 words.

   a) How many bits are there in a main memory address ?
   b) How many bits are there in each of the TAG, SET and WORD fields ?

8. Discuss on RAID technology.

9. What is meant by interleaving ?

10. Explain the READ and WRITE operations in a static memory cell. **(10×4=40 Marks)**

PART – B

Answer **any one** full question from **each** Module.

Module – I

11. a) Explain instruction execution and types of instruction sequencing. 10

    b) Draw and explain single bus organization of the CPU, showing all the registers and data paths. 10

OR

12. a) What is a subroutine ? What are the steps that occur during a subroutine Call and Ret instruction ? 10

    b) What is meant by the term addressing mode ? Explain briefly on various addressing modes with examples. 10

Module – II

13. a) Explain the basic organization of a microprogrammed control unit and the generation of control signals using microprogram. 14

    b) What are the advantages and disadvantages of hardwired and microprogrammed control ? 6

OR

14. a) What is DMA ? Explain DMA operation with a neat diagram and the different data transfer modes in DMA. 12

    b) Compare :
       i) Programmed I/O and Interrupt driven I/O.
       ii) Memory mapped I/O and I/O mapped I/O. 8

Module – III

15. a) What is the need of a cache memory ? Discuss cache replacement strategies in detail. 10

    b) Write short notes on :
    i) Flash memory
    ii) SRAM. 10

OR

16. a) With the help of diagram, describe the internal organization of a memory chip. 10

    b) Write short notes on any two computer peripherals. 10