

Roll No.....

**BCA-302**

**B.C.A. (Semester III) Examination – 2011**

**Paper: Second**

**Computer Organization**

*Time: Three Hours]*

*[Maximum Marks: 75*

**Note: Section A is compulsory. Attempt any seven questions from Section B and one question from Section C.**

**Section-A**

1. (a) Using 10's complement subtract 62978 from 2538.  
(b) Using is complement substrate 1000100 from 1010100.
  
2. A block set associative cache consists of a total of 64 blocks divided in to 4 blocks sets. The main memory contains 4096 blocks each consisting of 128 works.
  - (i) How many bits are in main memory address?
  - (ii) How many bits are there in each of the TAG, SET and WORD fields?

**Section- B (6 marks each)****(Short Answer Type Questions)**

3. Explain the need of memory hierarchy with the help of a blocks diagram? What is the reason for not having one large memory unit for storing all information at one place?
4. What do you mean by Auxiliary memory? Discuss the construction of magnetic disk.
5. What is an interrupt? Describe its significance for digital computers. Also discuss various types of interrupts in brief.
6. With the help of block diagram, discuss working of DMA. Also explain the working of DMA controller.
7. Discuss static and Dynamic RAM. Explain 2D and  $2\frac{1}{2}$  D (RAM) organization with their merits and demerits.

8. What are the different asynchronous modes of Data transfer? Discuss handshaking scheme with suitable examples?
9. Explain Moore's law and discuss its consequences.
10. Explain the role of stacks in programming? What are push and pop operation?
11. What do you understand by Prefetching microinstruction? Write down advantages and disadvantages of micro programmed control.
12. Discuss the following with their advantages and disadvantages:
  - (i) RISC (Reduced instruction set computer)
  - (ii) CISC (Complex instruction set computer)

**Section –C (18 marks)**

**(Long Answer Type Questions)**

13. Write short notes on any four of the following:

- (1) Operating system requirement
- (2) Instruction format
- (3) Set Associative mapping
- (4) Semi conductor main memory
- (5) Computer Components
- (6) Computer Function
- (7) Direct Memory Access
- (8) Inter Connection Structures

14. Convert the following:

- (1) Decimal to Binary 64567.1
- (2) Binary to Decimal 10000100.1
- (3) Decimal to octal 5432.1
- (4) Octal to Decimal 1212.10
- (5) Decimal to Hexadecimal 4562.112
- (6) Hexadecimal to Decimal AB123
- (7) Octal to Binary 55542
- (8) Hexadecimal to Binary BAC
- (9) Binary to Hexadecimal 110101010100111