

Roll No.

BCA-101(O)

B. C. A. (First Semester)
EXAMINATION, Dec., 2012

(Old Course)

Paper First

COMPUTER FUNDAMENTALS

Time : Three Hours]

[Maximum Marks : 75

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

Section - A

(Numerical/Analytical/Problematic Questions)

Note : All questions are compulsory.

1. Fill in the blanks. 1 each
 - (i) CD is an example of memory access.
 - (ii) Binary system uses and symbols only.
 - (iii) BIOS stands for
 - (iv) Registers are high speed elements.
 - (v) Speed of microprocessor is measured in
 - (vi) CPU directly interacts with memory.
 - (vii) The MSB of ASCII code represents

- (viii) The invisible concentric circles on a disk are called
- (ix) MICR stands for
- (x) is a pictorial representation of an algorithm.
2. Define the parameters on the basis of which different types of computer systems are compared. 4
3. Why does computer use binary system ? Explain. 2

Section – B

(Short Answer Type Questions)

Note : Attempt any *seven* questions. Each question carries 6 marks.

4. Define at least three different categories of high level languages. Give at least *two* examples of high level language in each category.
5. Why do we need compilers or interpreters for programming languages ? Where do our programs reside ?
6. State different types of memory that exist in a computer system. Why do we need to have different categories of memories ?
7. (a) Define word length of a computer.
(b) Define the term Bus with respect to Address, Data and Control.
8. (a) What do you understand by MIPS and MFLOPS. These terms are related to which component of a computer system ?

- (b) What is the role of operating system in a computer ? Under which software category is operating system placed ?
9. Perform the following operations :
- (i) $(1010)_2 = ()_{10}$
 - (ii) $(10)_{10} = ()_2$
 - (iii) $(12.625)_{10} = ()_2$
 - (iv) $(6B9)_{16} = ()_2$
 - (v) $(6E)_{16} = ()_{10}$
 - (vi) $(3DE)_{16} = ()_8$
10. (a) Subtract $(2)_{10}$ from $(6)_{10}$ using binary arithmetic.
(b) Add $(59)_{10}$ and $(-84)_{10}$ using 10's complement wherever required.
(c) What will be 1's complement and 2's complement of $(4)_{10}$?
11. Define the following :
- (i) Fixed point representation
 - (ii) Floating point representation
 - (iii) Mantissa
 - (iv) Exponent

Section - C

(Long Answer Type Questions)

Note : Attempt any *one* question. Each question carries 17 marks.

12. (a) Draw a flowchart to calculate the sum of 10 positive integers. Note user can enter negative integers values also these are to be rejected. 10

(b) How is Information Technology helpful in education ? Write in short about at least one project Government of India is running in the field of Information Technology. 7

13. (a) Draw a flowchart to count the number of positive integers user has entered out of 100 integer values he/she has entered. 10

(b) Write in short about the working of optical drives and magnetic drives used in computer systems. 7