Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS/B.OPTM/SEM-2/BO-205/2012

2012

COMPUTER FUNDAMENTALS AND PROGRAMMING

Time Allotted : 3 Hours   *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A
(Multiple Choice Type Questions)

1.   Choose the correct alternatives for any *ten* of the following :

$$10 \times 1 = 10$$

i)   Which is the latest version of MS Word ?

   a)   Word XP   b)   Windows XP

   c)   Word 2007   d)   Word 2010.

ii)   Which command does note exist in DOS ?

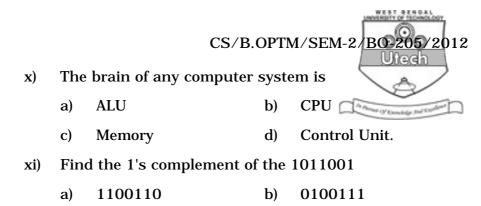   a)   CLS   b)   SUM

   c)   CD   d)   DIR.

iii)   What is the function of Recycle Bin ?

   a)   Store deleted file   b)   Store temporary file

   c)   Store corrupted file d)   Store Document file.

iv) Logic equation of sum for Half Adder

    a) $x \oplus y$ b) $x + y$

    c) xy d) $\overline{x}\, y$.

v) Which command is used to create a directory ?

    a)   Chdir   b)   Makedir

    c)   Mkdir   d)   All of these.

vi) How many sheets are there in excel workbook by defaut ?

    a)   1   b)   2

    c)   3   d)   Many.

vii) The break statement used with

    a)   Conditional Statement

    b)   Loop Control Statement

    c)   Printf and Scanf statement

    d)   none of these.

viii) What is the short-cut key to create a chart in Excel ?

    a)   F11   b)   F9

    c)   F10   d)   F2.

ix) In which standard library file is the function scanf() located ?

    a)   stdlib.h   b)   stdio.h

    c)   stdout.h   d)   stdoutput.h.

x) The brain of any computer system is

    a) ALU   b) CPU

    c) Memory   d) Control Unit.

xi) Find the 1's complement of the 1011001

    a) 1100110   b) 0100111

    c) 0100110   d) 1011000.

GROUP – B
(Short Answer Type Questions)
Answer any *three* of the following.   3 × 5 = 15

2. Write an algorithm for interchanging the numeric data values of two variables.

3. Draw the logic circuit of AND and OR gate using NAND gate.

4. Write a program to check whether a number is even or odd.

5. a) Subtract 56 from 92 using complementary method.

    b) Express following Boolean expression in sum of product form

$$xy + \bar{x}z \qquad\qquad\qquad 2 + 3$$

6. Prove the following Boolean expression :

$$x \oplus (y \oplus z) = (x \oplus y) \oplus z.$$

GROUP – C
(Long Answer Type Questions)
Answer any *three* of the following.   3 × 15 = 45

7. a) Draw the login circuit of 2 to 4 line decoder.

    b) Distinguish between While Loop and Do While Loop.

    c) Write the following commands :

       i) Write a command to display list of hidden files in ascending order of creation/modification date

ii) Write a command to create a file

iii) Make the above file read only and hidden

iv) Write a command to sort the content of a file and send the output to a new file ss.txt on drive F

v) Write a command to move a file from one drive to another drive. $5 + 5 + 5$

8. a) Construct the logic equations of borrow and difference and draw the logic circuit of full subractor.

b) Draw logic circuit of

$$\left(\bar{A}B + CD \right)\left(A\bar{B} + \bar{C}\,\bar{D} \right)$$

c) What is relational operator in C ? $6 + 5 + 4$

9. a) Prove the following Boolean expression

$$(x + y)(x + z)(y + z) = xz + yz + xy \qquad 5$$

b) Difference between If – Else and Switch. $\qquad 5$

c) Write a program to check whether a year is leap year or not. $\qquad 5$

10. a) Write a program and draw a flowchart to print first ten natural numbers.

b) White a program to check whether a number is prime or not. $8 + 7$

11. Write a short notes on any three of the following : $\qquad 3 \times 5$

a) Input and output unit

b) Half adder

c) Operators in C

d) MS Office

e) De Morgan's Law.

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