CS/B.OPTM/SEM-2/BO-205/09

1. ....
Signature of Invigilator

2. ....
Signature of the Officer-in-Charge

Reg. No. | | | | | | | | | | | | | | | |

Roll No. of the Candidate | | | | | | | | | | | | | | | |

CS/B.OPTM/SEM-2/BO-205/09

ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

COMPUTER FUNDAMENTALS & PROGRAMMING (SEMESTER - 2)

Time : 3 Hours] [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

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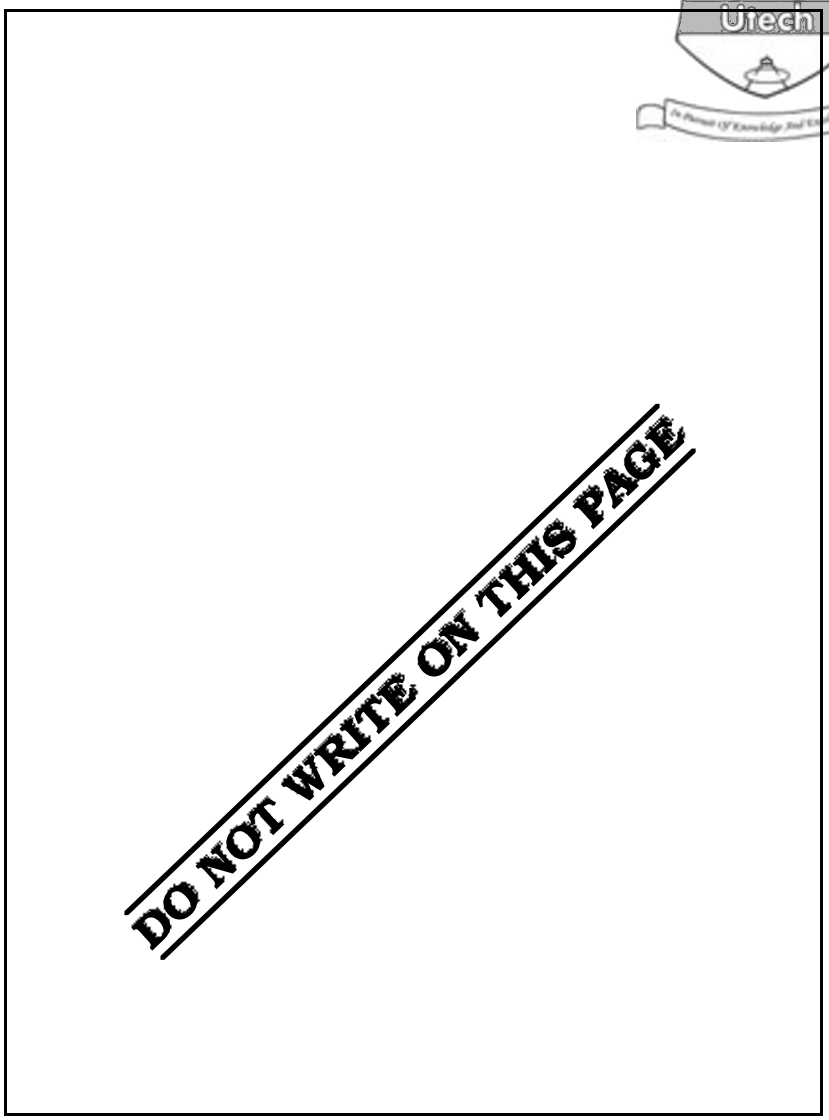
FOR OFFICE USE / EVALUATION ONLY

Marks Obtained

					Group – A							**Group – B**			**Group – C**			
Question Number																	***Total Marks***	***Examiner's Signature***
Marks Obtained																		

....
Head-Examiner/Co-Ordinator/Scrutineer

2366 (13/06)



ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

COMPUTER FUNDAMENTALS & PROGRAMMING

SEMESTERS - 2

Time : 3 Hours] [Full Marks : 70

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives of the following : $10 \infty 1 = 10$

i) Decimal number of this binary 101101.10101 is

a) 45.65625 b) 12.6875

c) 9.3125 d) 0.65625. ☐

ii) One's complement of 0100111001 binary is

a) 1011000110 b) 0010010110

c) 1100111001 d) 11100100101. ☐

iii) Any logic circuit can be implemented using which gate only ?

a) AND gate b) OR gate

c) NOT gate d) NOR gate. ☐

iv) What will be the decimal equivalent of the octal number (78) base 8 ?

a) 512 b) 64

c) 128 d) 32. ☐

v) A worksheet in MS Excel consists of ..... rows and ..... columns.

a) 255, 65536 b) 256, 65356

c) 256, 65536 d) 254, 65356. ☐

vi) ..... is the header file that contains all the commonly used input/output functions.

a) inputoutput.h b) io.h

c) stdio.h d) commio.h ☐

vii) ..... is the preprocessor directive for attaching a header file with the program.

a) #attach b) #link

c) #combine d) #include. ☐

viii) Every word written in a C program is either a keyword or a

a) identifier b) variable

c) constant d) none of these. ☐

ix) ..... character initiates an escape sequence in C.

a) \

b) *

c) %

d) There is no escape sequences in C. ☐

x) ..... is the format specifier for an unsigned integer.

a) %d b) %ui

c) %u d) %I. ☐

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \infty 5 = 15$

2. Find the following :

   a) $(FAB)_{16} = (?)_2$

   b) $(1010101100)_2 = (?)_{10}$

3. Prove that : $(A + B) . \left(\overline{A.B} \right) = A . \overline{B} + B . \overline{A}$.

4. Draw the Full Adder using two Half Adders.

5. Define decoder. Draw a 3 input decoder.

6. Differentiate product-of-sum and sum-of-product with example.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \infty 15 = 45$

7. a) Draw and explain the basic organisation of a computer system.

   b) Draw the logic circuit of $(A + B) . (C + D) . \left(\overline{A} + \overline{B} \right)$. 4 + 6 + 5

8. Explain why NAND and NOR gates are universal. A three bit message is to be transmitted with an odd parity. An odd parity generator generates a parity bit as P to make the total number of 1s odd. (including P). That is, $P = 1$, only when the number of 1s in the input string is even. Design a combinational logic circuit for this parity generator. 5 + 5 + 5

9. Write a program in C to input a number and print all the prime numbers before the number.

10. Write short notes on any *five* from the following : 5 ∞ 3 = 15

a) CPU speed

b) Magnetic tapes

c) Touch screen terminals

d) CD

e) Input/output units

f) System software

g) Compilers.

11. Write a program to print all numbers between 100 and 200 which are divisible by both 3 and 7.

END