INTRODUCTION TO COMPUTING (SEMESTER - 2)

CS/B.Tech/SEM-2/CS-201/09

1. ..... *Signature of Invigilator*

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

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

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

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CS/B.Tech/SEM-2/CS-201/09

ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

INTRODUCTION TO COMPUTING (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

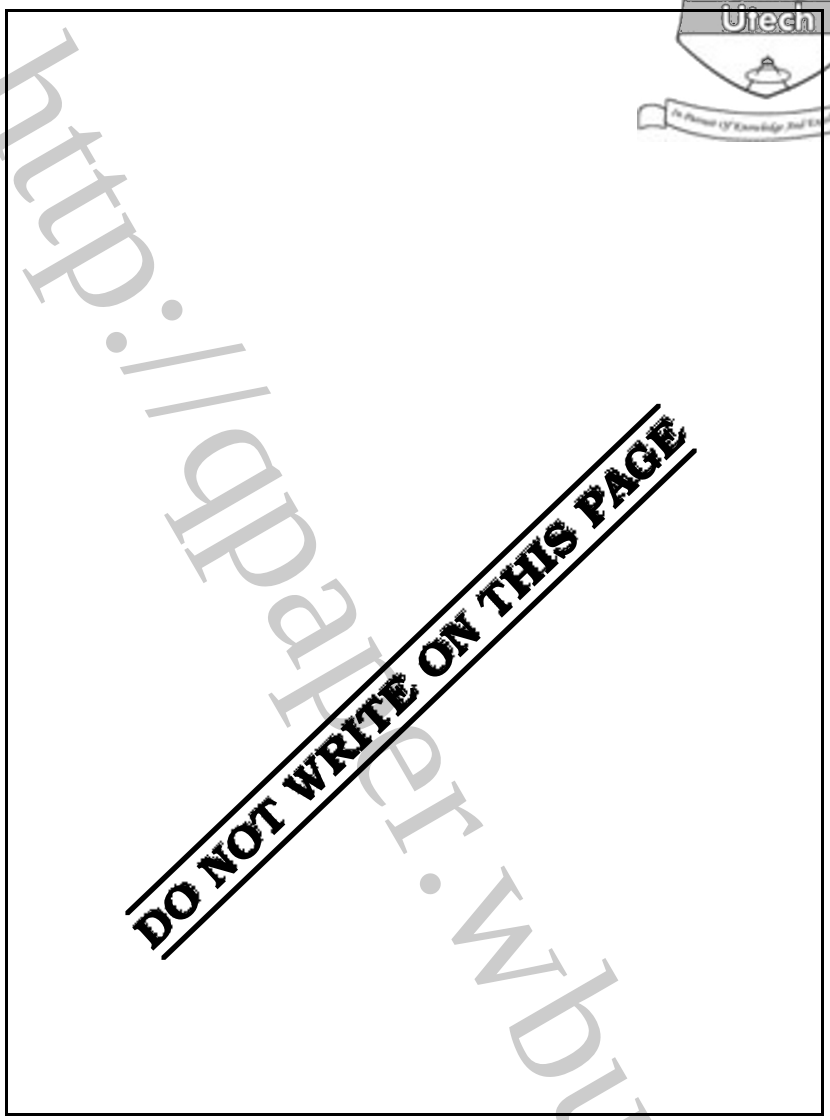
Marks Obtained

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

.....

Head-Examiner/Co-Ordinator/Scrutineer

2321 (11/06)



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GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10

i) Which one of the following declaration is invalid ?

a) int 2A b) int A2A

c) int A2 d) int AA2. ☐

ii) Which one is the right output ?

```
int x = 9 ;
if ( 10 )
        printf("%d", ++x);
else
        printf("%d", x++);
```

a) 9 b) 10

c) 11 d) 12. ☐

iii) Which one is the right output ?

```
char a[ 50 ] = "computer" ;
printf("%d", strlen(a));
```

a) 9 b) 10

c) 8 d) 11. ☐

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iv) Which one is the right output ?

```
#define int char

main()

{

    int i = 65;

    printf("sizeof(i)=%d",sizeof(i));

}
```

a) sizeof(i)=1 b) sizeof(i)=2

c) sizeof(i)=4 d) sizeof(i)=8.

v) Which one is the right output ?

```
main()

{

    int i = 5, j = 6, z;

    printf("%d", i + ++ j );

}
```

a) 12 b) 10

c) 11 d) 13.

vi) In Hexadecimal number system, *E* is equivalent to the number in decimal

a) 10 b) 12

c) 14 d) 15.

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vii) What is the range of unsigned short int ?

a) 0 to 65535 b) 0 to 255

c) – 128 to 127 d) none of these. ☐

viii) Operating system is

a) Application Software b) System Software

c) Firmware d) None of these. ☐

ix) ALU is a part of

a) Memory b) CPU

c) Output device d) Input device. ☐

x) Member of a union uses

a) different storage location b) same storage location

c) no storage location d) none of these. ☐

xi) What will be the value of *i* and *m* after executing the following code ?

```
int i = 1, m;

m = i ++;
```

a) 6, 5 b) 5, 5

c) 5, 6 d) 6, 6. ☐

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GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. a) Convert $(17{\cdot}25)_{10}$ to Binary. 1

   b) What are 2's compliment numbers ? How do you use this system to perform $(51)_{10} - (27)_{10}$ in binary ? 1 + 2

   c) What are the main differences between RAM & ROM ? 1

3. a) What is ternary operator ? Explain with example. 2 + 1

   b) Write down the difference between compiler and interpreter. 2

4. a) Write down the main characteristics of algorithm. 2

   b) Write a flowchart to find the sum of the all integers ranging from 100 to 200 and divisible by both 2 and 3. 3

5. Briefly describe the function of different components of a conventional digital computer with a suitable block diagram. 5

6. Write a C program to find out the G.C.D of two numbers. 5

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. a) Differentiate between "do-while" and "while" statements with suitable examples. 4

   b) Differentiate between "break" and "continue" statements with examples. 4

   c) What is the difference between structure and union in C programming ? Supplement with examples. 4

   d) Explain recursion with an example. 3

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8. a) Write a C program to check whether a given number is prime number or not. 5

b) Write a program to compute factorial of a number read from keyboard. 4

c) What are auto, external and static variables ? Explain their uses with suitable examples. 6

9. a) What is array of pointers ? Explain with example. 4

b) Explain call by value and call by reference with examples. 4

c) Write a program in C to find the real roots of a quadratic equation using user defined function Quad( ). 7

10. a) Explain two input Exclusive OR gate using truth table. $2\frac{1}{2}$

b) Why NAND gate is called universal gate ? $2\frac{1}{2}$

c) Simplify :

$$(A + \bar{B}). (A.C) + (A.\bar{B} + \bar{A} .C) . (\overline{A + D})$$ 4

d) Convert : 6

i) $(2\ AD)_8 = (\ )_2$

ii) $(11100111101)_2 = (\ )_{16}$

iii) $(25{\cdot}125)_{10} = (\ )_2$.

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11. Write short notes on any three of the following : 3 × 5 = 15

a) Void pointer and null pointer

b) Dynamic memory allocation function

c) Function prototype

d) Bitwise operator

e) Macro.

END

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