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<b>2002 SCHEME</b>
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**First / Second Semester B.E. Degree Examination, July 2007**  
**Common to All Branches**  
**Computer Concepts and C Programming**

Time: 3 hrs.]

[Max. Marks:100

**Note : Answer any FIVE full questions.**

- a. With a block diagram, explain the parts of a digital computer. (08 Marks)
- b. Differentiate between main and secondary memories. (06 Marks)
- c. A disk pack has 400 tracks per surface. There are 12 sectors per track and 256 bytes per sector.
- i) What is the storage capacity of one surface?
- ii) What is the storage capacity of the disk pack? (06 Marks)
- a. What is an assembler? How does it differ from a compiler? (06 Marks)
- b. What is an operating system? Explain the basic functions that an operating system should perform. (08 Marks)
- c. Explain the following commands :
- i) COMMAND
- ii) CAT
- iii) DIR \*.TXT (06 Marks)
- a. Draw a flow chart to find roots of quadratic equation. (08 Marks)
- b. Explain the following with an example for each
- i) Keywords
- ii) Identifiers
- iii) Constants. (06 Marks)
- c. Explain the structure of C-program. (06 Marks)
- a. What is a variable? List the rules involved for defining variables. (06 Marks)
- b. Write an appropriate scanf function to enter numerical values for i, j and k assuming
- i) Values for i, j will be integer
- ii) Values for k will be floating point value. (06 Marks)
- c. Write a program to print the following message in the given format

TECHNICAL	UNIVERSITY
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(08 Marks)

Contd.... 2

- 5 a. Rewrite the following using conditional operator  
 if(x <= 2)  
     y = 1.5 \* x + 3;  
 else  
     y = 2 \* x + 5;
- (05 Marks)
- b. Write a brief note on  
 i) go to statement  
 ii) Break statement
- (05 Marks)
- c. Determine the value of each of the following expressions :  
 Assume a = 10, b = 22, K = 15, P = 5  
 i) m = b % a  
 ii) K += (K - 2) % P  
 iii) alpha = (a > 0 && a >= 10) || (K < 0 && P > 0)
- (10 Marks)
- 6 a. With example, explain the nesting of loops. (06 Marks)  
 b. Write a program using a single subscripted variable to evaluate the following expressions
- $$\text{Total} = \sum_{i=1}^{10} X_i^2$$
- The values of  $X_1, X_2, \dots$  are read from the terminal. (06 Marks)
- c. Write a program to calculate factorial of a given number using while loop. (08 Marks)
- 7 a. Write a program to read 10 integers in an array. Find the largest and smallest numbers without sorting them. (10 Marks)  
 b. The main is a user defined function. How does it differ from other user defined functions? (06 Marks)  
 c. Distinguish between global and local variables. (04 Marks)
- 8 a. S1, S2 and S3 are three string variables. Write a program to read two string constants into S1 and S2 and compare whether they are equal or not. If they are not, join them together. Then copy the contents of S1 to the variable S3. At the end, the program should print the contents of all the three variables and their lengths. (12 Marks)  
 b. What are the similarities and differences between pointer to an int and pointer to a float? Explain with example. (08 Marks)

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<b>2002 SCHEME</b>
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**First/Second Semester B.E. Degree Examination, Dec.06 / Jan.07**  
**Common to all Branches**

**Computer Concepts and C Programming**

Time: 3 hrs.]

[Max. Marks:100

**Note: 1. Answer any FIVE full questions.**

- 1
  - a. Explain the VON-NEUMAN concept in computers with a block diagram. (06 Marks)
  - b. Explain the concept of main memory, its properties, its types and its units of measurement. (06 Marks)
  - c. A fixed head disk unit divides each track into  $n$  sectors. Each sector stores 1024 Bytes. There are 20 cylinders with 10 tracks per cylinder. The disk pack rotates at the rate 1000 revolutions per minute. Calculate
    - i) Number of bytes stored per track.
    - ii) The data transfer rate of the disk unit. (08 Marks)
  
- 2
  - a. Explain the functions of the compiler, assembler and the editor. (06 Marks)
  - b. Explain syntax of the following DOS commands with all options,
    - i) DIR.
    - ii) DISKCOPY.
    - iii) FORMAT.
    - iv) PATH. (08 Marks)
  - c. Explain the concept of internet. (06 Marks)
  
- 3
  - a. What is an algorithm? How does it differ from a flow chart? (05 Marks)
  - b. Explain the structure of a typical C program. (05 Marks)
  - c. Write a flow chart to solve a given quadratic equation for all possible cases. (10 Marks)
  
- 4
  - a. Explain the precedence and associativity of arithmetic operators with examples. (05 Marks)
  - b. Find the result of each of the following expressions taking,  $\text{int } i = 4, j = 2, k = 6, a = 2;$ 
    - i)  $k * = i + j;$
    - ii)  $j = i / = k;$
    - iii)  $i \% = i / 3;$
    - iv)  $m = i + (j = 2 + k);$
    - v)  $a = i * j / = k / 2;$  (05 Marks)
  - c. Give a brief note on implicit and explicit type conversions with examples. (06 Marks)
  - d. Explain about the multiple assignment statements with examples. (04 Marks)
  
- 5
  - a. What are the data types available with C? (04 Marks)
  - b. Explain the difference between if .....else and switch structures with examples. (08 Marks)
  - c. Write a C program to find the average of best three marks from the given four test marks. (08 Marks)

- 6 a. How would you decide the use of one of the three loops in C for a given problem? (06 Marks)  
b. Write a program by using Do-While loop to check whether the given number prime or not. (08 Marks)  
c. What is an array? Explain the syntax rules for arrays. (06 Marks)
- 7 a. Write a program to input 30 students marks in a test through the key board. Compute and display the average marks. Highest mark and lowest mark. (10 Marks)  
b. Write a program that uses a function to sort an array of integers. (10 Marks)
- 8 a. Describe the limitations of using getchar and scanf functions for reading strings. (06 Marks)  
b. The names of employees of an organization are stored in three arrays namely first-name, second-name and last-name. Write a program to concatenate the three parts into the one string to be called name. (10 Marks)  
c. What are pointers? Why are they important? (04 Marks)

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**/Second Semester B.E Degree Examination, January/February 2003**

**Common to all branches**

**(Old Scheme)**

**Computer Concepts & C Programming**

[Max.Marks : 100

Time: 3 hrs.]

**Note:** Answer any 8 questions from question No. 1 to 12  
and 6 questions from question No. 13 to 20.

1. With a block diagram, explain various units of a digital computer. (5 Marks)
2. Define the following:
  - i) Variable
  - ii) Keyword
  - iii) System Software
  - iv) Program
  - v) Identifier
 (5 Marks)
3. What do you mean by non impact printer? Explain in brief working of Laser printer. (5 Marks)
4. List out the rules followed in framing variable names. (5 Marks)
5. Compare assembly language with higher level language. (5 Marks)
6. Write a note on time sharing system. (5 Marks)
7. Explain switch statement with an example. (5 Marks)
8.
 

```
int a,b;    a=11;    b=6;
```

 Give the results of
  - i) a & b
  - ii) a : b
  - iii) a ^ b
  - iv) a >> 2
  - v) ~ b
 (5 Marks)
9. List out fundamental data types in C. (5 Marks)
10. Write a program to read a simple arithmetic expression and count number of operators in that. (5 Marks)
11. What is flow chart? List out symbols used in writing flow chart. (5 Marks)
12. Discuss about "continue" and "break" with examples. (5 Marks)
13. (a) Explain different looping constructs in C. (5 Marks)
- (b) Write a program to read 3 sides of a triangle and check whether it is a right angled triangle. (5 Marks)

14. (a) Write a program to search an element in an array using binary search. (5 Marks)  
(b) Write flow chart for the above program. (5 Marks)
15. (a) Write a program to merge two sorted arrays. (5 Marks)  
(b) Explain row major addressing in 2 Dimensional arrays? Give an example. (5 Marks)
16. (a) Write a program to append string "str2" at the end of the string "str1" without using any library function. (5 Marks)  
(b) Write a program for insertion sort. (5 Marks)
17. (a) Write a program to check whether given matrix is symmetric or not. Find trace of the matrix. (5 Marks)  
(b) Write a program to read 'n' names and sort them alphabetically. (5 Marks)
18. (a) What is a user defined function? Explain actual and formal parameters. (5 Marks)  
(b) Write a C function which finds all occurrences of a given character in a string. (5 Marks)
19. (a) What is recursion? Write a recursive function to find GCD. (5 Marks)  
(b) What is a structure? Explain with an example structure with in a structure. (5 Marks)
20. (a) What are pointers? How do you declare a pointer variable? (5 Marks)  
(b) Write a program using pointers to swap two numbers. (5 Marks)

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**NEW SCHEME**

**CCP13/23**

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**Second Semester B.E Degree Examination, January/February 2004**  
Common to all Branches  
(New Scheme)

**Computer Concepts & C Programming**

Time: 3 hrs.]

[Max.Marks : 100

**Note:** Answer any FIVE full questions with atleast one question from Section I.

**SECTION - I**

- 1. (a) Explain the logical organisation of a digital computer with the help of a block diagram. (10 Marks)
- (b) Differentiate between:
  - i) primary memory and secondary memory.
  - ii) system software and application software.
  - iii) high level language and assembly language.
  - iv) compiler and interpreter
  - v) syntax error and logical error.

- 2. (a) Write the commands to achieve the following in DOS and UNIX environments: (10 Marks)
  - i) Display the contents of an ASCII file.
  - ii) List the contents of current directory.
  - iii) Copy the contents of file 1 and file 2.
  - iv) delete a file from current directory.
  - v) rename a file by another name.
- (b) Explain the construction and working of laser printer. (10 Marks)

**SECTION II**

- 1. (a) Write an algorithm to find
  - i) the total number of even integers
  - ii) the total number of odd integers
  - iii) the sum of all even integers
  - iv) the sum of all odd integersfrom a given set of 100 integers. (10 Marks)
- (b) Pick the incorrect floating point constants and give reasons for the same:
  - i) 40,943.65    ii) 428.58
  - iii) 46E2        iv) 43
  - v) 465.

- (c) Write an algorithm to find the given number is prime or not. (5 Marks)

4. (a) Write C expressions corresponding to the following (Assume all quantities are of type float):

i)  $\frac{(ax+b)}{(ax-b)}$

ii)  $\frac{2x+3y}{x-6}$

iii)  $x^5 + 10x^4 + 8x^3 + 4x + 2$

iv)  $(4x + 3)(2y + 2z + 4)$

(10 Marks)

v)  $\frac{a}{b(b-a)}$

- (b) Given the string "WORDPROCESSING", write a program to read the string from the keyboard and display the following output:

WORD PROCESSING

WORD

PROCESSING

W.P.

(10 Marks)

5. (a) How do you perform looping in C? Give the syntax of loop constructs in C. Compare the same. (10 Marks)

- (b) Given an integer number, write a C program using while loop to reverse the digits of the number. (10 Marks)

6. (a) Write a function to test whether or not a given integer number is prime. Write main( ) which reads the integer to be tested from keyboard and calls the function to test for primeness. (10 Marks)

- (b) Write a function which reverses a list of  $n$  integers stored in an array passed to it. The main should read  $n$  integers in to an array and print the reverse list. (10 Marks)

7. (a) Explain any five string handling functions in C with appropriate examples. (10 Marks)

- (b) Explain the difference between "call by value" and "call by reference" with suitable examples. (5 Marks)

- (c) Write a function using pointers to determine the length of a character string. (5 Marks)

8. Write short notes on:

i) Relational and logical operators

ii) Preprocessor directives

iii) Scope and life time of variables

iv) Pointers in C.

(4×5=20 Marks)



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**1st/Second Semester B.E Degree Examination, January/February 2004**  
**(Old Scheme)**

**Computer Concepts & C Programming**

Time: 3 hrs.]

[Max.Marks : 100

**Note:** Answer any 8 questions from question No. 1 to 12  
 and answer 6 full questions from question No. 13 to 21.

1. Mention the important features of 3rd and 4th generation computers. (5 Marks)
2. What is digital computer? Explain with block diagram. (5 Marks)
3. What are input devices? Give any four of their examples. (5 Marks)
4. What are secondary storage devices? Explain any two of them. (5 Marks)
5. Differentiate between higher level language and machine language. (5 Marks)
6. What do you mean by LAN and WAN? Differentiate between them. (5 Marks)
7. What is an algorithm? Write an algorithm to find the largest of 3 numbers. (5 Marks)
8. What is an internet? How does it differ from LAN? (5 Marks)
9. What are 'C' tokens? Explain them and give example for each. (5 Marks)
10. Give the syntax of the formatted input and output functions. (5 Marks)
11. Write the output of the following program  

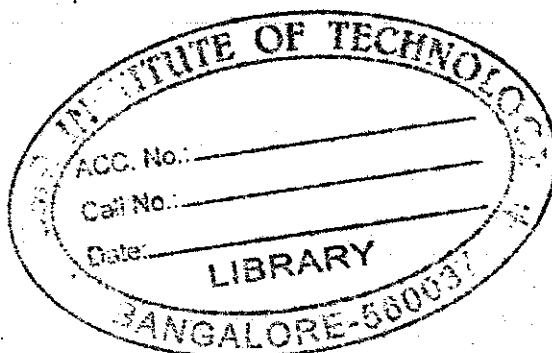
```
main ( )
{ int    X = 0XAD, Y = 064, Z = 78, W;
      W = x + 2 + y + z;
      print f (" %0 %X %d ", w, w, w);
}
```

(5 Marks)
12. What are operators? Explain the following  
 i) Conditional operator  
 ii) Increment and Decrement operator  

(5 Marks)
13. Write a program to find the solution of the quadratic equation  $ax^2 + bx + c = 0$ , determine all the roots and print the suitable messages. (10 Marks)

14. Write a recursive program to generate Nth fibonacci number. (10 Marks)
15. What are the different types of control statements? Explain any three in brief. Give examples for each. (10 Marks)
16. (a) Differentiate between WHILE and DO-WHILE statements. (5 Marks)  
(b) Write a 'C' program to swap two integer values without using temporary variable. (5 Marks)
17. Write a 'C' language program to multiply two matrices using functions. (10 Marks)
18. (a) Mention any four string handling functions and explain each of them with an example. (5 Marks)  
(b) Write a program to reverse a given string. (5 Marks)
19. (a) What are user defined functions? Explain the basic structure of 'C' functions. (5 Marks)  
(b) What is preprocessor directive? Why it is required. (5 Marks)
20. (a) What are structures and unions? How do they differ from arrays? Give example. (5 Marks)  
(b) What are pointers? Why are they required? How do you declare and initialize them? (5 Marks)
21. Write short notes on:  
(a) Internal DOS commands  
(b) Operating system  
(c) Real time systems  
(d) Line printer (5 Marks each)

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st/Second Semester B.E Degree Examination, January/February 2005

(Old Scheme)

**Computer Concepts & C Programming**

Time: 3 hrs.]

[Max.Marks : 100

**Note:** 1. Answer any 8 questions from question No. 1 to 12  
and answer 6 full questions from question No. 13 to 21.  
2. Programs must be neatly and properly documented  
where ever needed.

1. What is a computer ? Mention different parts of computers. (5 Marks)
2. Mention the different input devices. Explain briefly any one of them. (5 Marks)
3. Explain the differences between PROM (programmable Read Only Memory) and EPROM (Erasable programmable read only memory) (5 Marks)
4. Distinguish between hardware, software and firmware. Give examples. (5 Marks)
5. Distinguish between system software and application software. Give examples. (5 Marks)
6. Explain the advantages of Local Area Networks (LAN). (5 Marks)
7. Give the syntax of the switch statement with example. (5 Marks)
8. Give the syntax of the conditional operator with examples. Does it replace the if else statement? Explain briefly. (5 Marks)
9. Write a C program to calculate the sum of first n terms, using for loop. (5 Marks)
10. Mention the different types of bitwise operators used in C. (5 Marks)
11. Write a C program to calculate the Fibonacci sequence, using recursive function. (5 Marks)
12. What is a pointer? Explain how it can be used to store linked lists. (5 Marks)
13. Write a C program to compute all the prime numbers between 100 and 1000 and calculate their sum. Display the numbers so that each row contains 5 numbers. (10 Marks)
14. Write a C program to calculate the roots of the Quadratic equation in all cases using switch statement. (10 Marks)

15. (a) Give the syntax of the If else ladder. (3 Marks)

(b) Write a C program to grade the students according to the following rules.

Marks	Grade
70 to 100	Distinction
60 to 69	First class
50 to 59	second class
40 to 49	Pass class
0 to 39	Fail

(7 Marks)

16. Write a C program to calculate the product of matrices of order.  $A(m \times n)$  and  $B(p \times q)$  using functions, after making necessary checks. (10 Marks)

17. Write a C program to search whether the given element is present in the array using Binary search. Indicate the preliminary condition for the use of the method. (10 Marks)

18. Write a C program to read two integer numbers n and r. Write a function to calculate the factorial of a number. Using the function, calculate  $\frac{n!}{(n-r)!r!}$ . (10 Marks)

19. Write a C program to find the value of PI using series  $PI = SQRT\left(\frac{6}{1^2} + \frac{6}{2^2} + \frac{6}{3^2} + \dots\right)$  to a given accuracy. (10 Marks)

20. Write a C program to sort a given array of N elements in ascending order using Bubble sort method using pointers. (10 Marks)

21. Write a program to accept the roll number, name and marks obtained in three tests by 10 students. Calculate the average of three tests for each student and also the class average. Use structures. (10 Marks)

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- (c)  $a$  and  $b$  are two integer arrays each with  $n$  elements. Write a program to find the array  $c$  such that  
 $c[i] = a[i] + b[n - 1 - i]$  (8 Marks)
7. (a) What are user defined functions [UDF]? Why UDF are required for large and complex problems? (6 Marks)
- (b) Write a program for user defined function that returns  $\sum_{i=0}^{n-1} a_i b_i$  where  $a$ , and  $b$  are arrays with  $n$  elements. Use the above user defined function to calculate.  

$$\frac{(x_0^2 + x_1^2 + x_2^2 + \dots + x_{n-1}^2) * (y_0^2 + y_1^2 + y_2^2 + \dots + y_{n-1}^2)}{x_0 y_0 + x_1 y_1 + x_2 y_2 + \dots + x_{n-1} y_{n-1}}$$
 (10 Marks)
- c) List bit wise operators and give example for any two. (4 Marks)
8. (a) Define auto, global, static and register variables and give one example for each. (6 Marks)
- (b) Find the final values stored in the variables  $x, y, z$  at the end of the program.

```

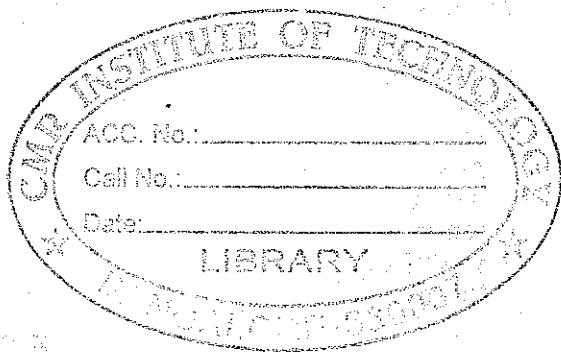
Main()
{
int x,y,z,*p,*q;
x=10;
y=15;
p=&x;
q = &z;
*q= *p + y -3;
y= y - (*p);
*p=*q-z;
}

```

(6 Marks)

- (c) Write a program to count the number of space in a given string. (6 Marks)
- (d) Find the values of variable  $x$  and  $m$  after execution of the following statements
- i)  $x = 15;$   
 $m = x + +;$
- ii)  $x = 15;$   
 $m = + + x;$  (2 Marks)

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First/Second Semester B.E Degree Examination, July/August 2005

Common to all Branches

## Computer Concepts & C Programming

Time: 3 hrs.]

[Max.Marks : 100

**Note:** Answer any FIVE full questions by selecting atleast ONE question from Part - A.

### PART - A

1. (a) Explain with a diagram the physical and logical organisation of a computer. (7 Marks)
- (b) Differentiate between :
  - i) Primary & Secondary memory
  - ii) Impact & Non-impact printer (5 Marks)
- (c) Explain with a diagram any one of the secondary storage device. (5 Marks)
- (d) Define : High level language, assembly level language and machine level language. (3 Marks)
2. (a) What is O.S? Give the functions of an operating system. (5 Marks)
- (b) List the advantages of LAN, WAN and internet. (6 Marks)
- (c) List and give their usage of any five UNIX commands. (5 Marks)
- (d) Differentiate between interpreter and editor. (4 Marks)

### PART - B

3. (a) Express the following mathematical expressions into 'C' expressions.

i)  $\frac{x^{1/2} + x^{2/3} + x^{3/4}}{x^{5/2} + x^{7/2}}$

ii)  $\frac{a+b}{c+\frac{d}{ef}}$

iii)  $\sqrt[n]{x}$

iv)  $\frac{e^{\sqrt{x}} + e^{\sqrt{|y|}}}{x \sin \sqrt{y}}$

v)  $\sqrt{\frac{\sin 45^\circ + \cos 30^\circ}{\alpha + \beta}}$

vi)  $0 \leq x \leq 1$

(6 Marks)

(b) Find the final values of the variables in the following program segment.

```
i) int a, b, c;
    float x, y;
    a = 10;
    b = 15;
    c = b/a;
    x = b/a;
    y = (float) b/a;
```

```
ii) int a, b;
     float x;
     a = 25/10 + 6.5;
     b = 25/10 + 6.6;
     x = 25/10 + 6.6;
```

(6 Marks)

(c) If the variables  $i, j, k$  hold 123, 105.658 and 0.0006 respectively find the output obtained from the following

```
Printf("\n%5d\b\b%8.2f\b\b%f", i, j, k);
```

```
Printf("\n%d\n%.1f\n%8.3f", i, j, k);
```

```
Printf("\n%2d\n%e\n%e", i, j, k);
```

```
Printf("\n%d\b\b\b%2e\b\b\b%4f", i, j, k);
```

(8 Marks)

4. (a) List out five rules to be followed while having a variable. Give one example for each rule with invalid case. (6 Marks)

(b) Write general hierarchy of a Paranthesis free expression involving arithmetic, relational and logical operators. (4 Marks)

(c) Some errors are there in the following program. Write the correct program.

Program to find distance and slope between two points

```
Float x1, y1, x2, y2
```

```
Scanf ("%f%f%f%f%f", x1, x1, y1, x2, y2);
```

```
Float s, d;
```

```
D = sqr(pow(x1 - x2, 2) + pow(y1 - y2, 2));
```

```
S = y1 - y2/x2 - x1;
```

```
Printf ("s = %f d = %f \n", d, s);
```

(10 Marks)

5. (a) Explain the use of break and continue statements in a loop. Supplement your explanation with an example. (6 Marks)

(b) Compare while loop and do-while loop. Give one example for each. (6 Marks)

(c) Write a program to print all the points with integer coordinates enclosed within a circle of radius 4 units from origin. (8 Marks)

6. (a) Write an algorithm to count the occurrence of digit 5 in a given integer number. (6 Marks)

(b) What is an array? How are they declared in 'C'? What are the rules to be followed while using arrays? (6 Marks)



# First / Second Semester B.E. Degree Examination, January 2006

## CCP 13 / 23 Computer Concepts & C-Programming

Time : 3 hours

Maximum Marks 100

Note : Answer any Five questions. Choose atleast one question from PART A

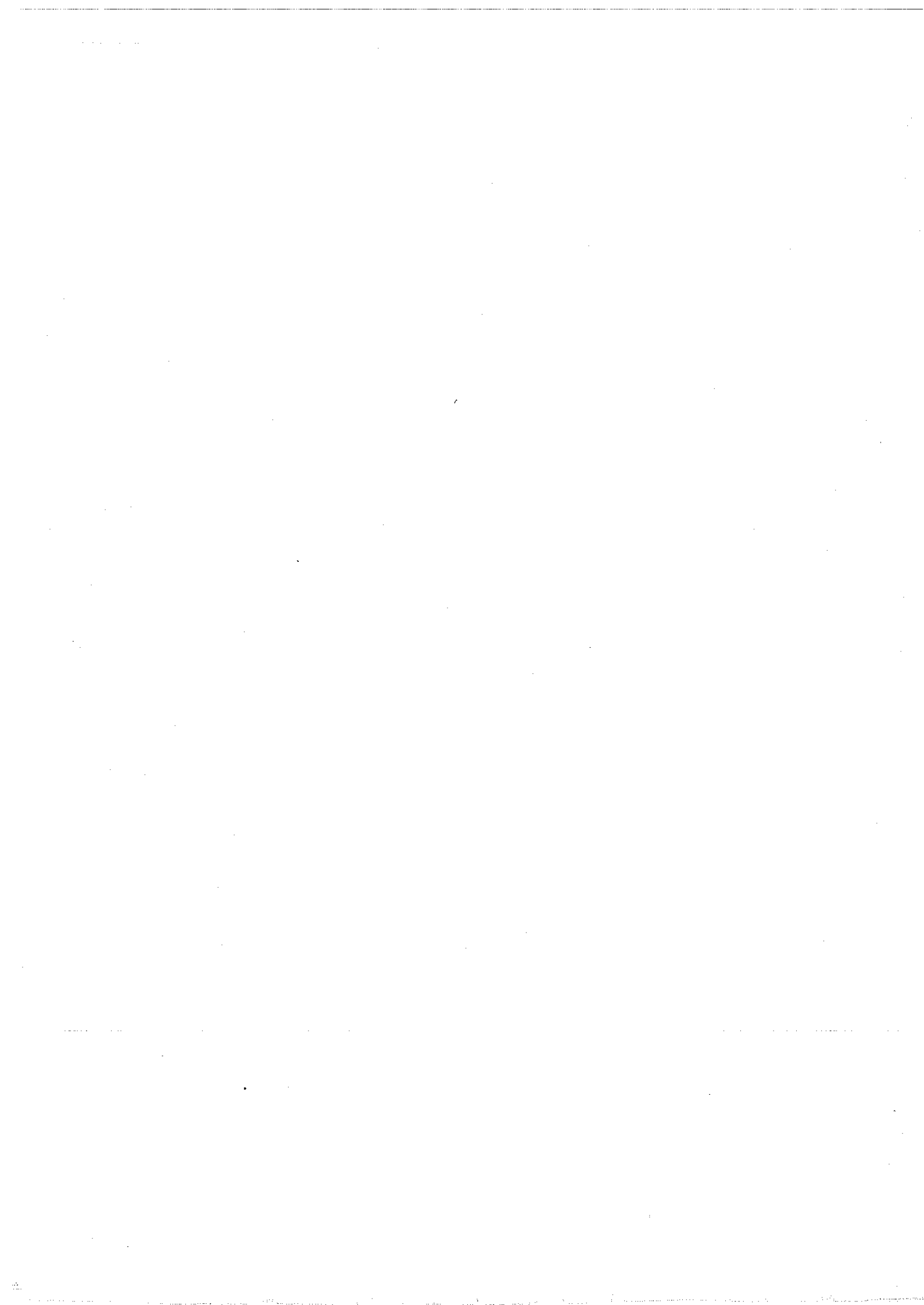
### PART - A

- 1 a) Briefly explain the different types of programming languages with their advantages and disadvantages. (6 marks)  
b) Differentiate between the following:  
(i) RAM and ROM (ii) Syntax error and logical error. (6 marks)  
c) Describe with a neat sketch, the features and working of magnetic tape unit.  
What are its merits and demerits? (8 marks)
- 2 a) Mention and define the services that computer networks are capable of providing. (5 marks)  
b) Explain the salient features of UNIX operating system. (10 marks)  
c) Define the following terms.  
(i) WWW (ii) E-mail (iii) HTTP (iv) Domain names (v) FTP (5 marks)

### PART - B

- 3 a) Explain the meaning of algorithm, with a simple example. (6 marks)  
b) Give the coordinates (x, y) of ten points, obtain a procedure which will output the coordinates of all points which lie inside or on the circle with unit radius with its center at (0, 0). (10 marks)  
c) What do you understand by the term 'token' in C language? (4 marks)
- 4 a) Assuming that C language allocates 2 bytes for integer, write down minimum and maximum values of integer. (4 marks)  
b) Explain the Concept of Conditional operator and Comma operators in C. (4 marks)  
c) Pick the incorrect decimal constant from the following list explaining why they are incorrect.  
-4689, +785, 425.35, 1/4, 2A45 (6 marks)  
d) Write down the C statement which display the values of ASCII code of character, its character representation and an integer with proper format. (6 marks)
- 5 a) What are unary and binary operators? Explain with examples. (6 marks)  
b) With the definition of : Int a, b, c, d, k, p, m.  
The following expressions are formed. Mention why each of them is considered as an incorrect integer expression.  
i)  $a - b + j$  ii)  $a - 4.0$  iii)  $a ++ b + c$  iv)  $a / b * \%c$   
v)  $- a(\%b + c)$  vi)  $a**b + m$  vii)  $(p*(m+k))$  viii)  $k /* d$  (8 marks)  
c) If statement in c language evaluates the condition expression as true or false (Boolean) in absence of Boolean data type in C language, explain how this is achieved. (6 marks)
- 6 a) Give the syntax of 3 types of loops in C. Explain working of each loop.  
Give one example for each type of loop. (12 marks)  
b) a and b are 2 arrays each with 10 elements write a program to find array C such that  
 $C[0] = a[0] + b[9]$   
 $C[1] = a[1] + b[8]$   
:  
:  
:  
 $C[8] = a[8] + b[1]$   
 $C[9] = a[9] + b[0]$  (8 marks)
- 7 a) What are User defined functions? Give one example. (8 marks)  
b) Write a program to find the intersection of 2 arrays a and b with size m and n respectively. (12 marks)
- 8 a) Explain any four built in string functions. Give one example for each. (12 marks)  
b) If P is a pointer having address '2000' what would be values for the following.  
 $P = P+2$ ; for int \* P  
 $P = P-1$ ; for float \* P  
 $P = P+10$ ; for char \* P  
 $P = P+1$ ; for double \* P (4 marks)  
c) What is call by value and call by reference. (4 marks)

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<b>NEW SCHEME</b>
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**First / Second Semester B.E. Degree Examination, July 2006**  
**Common to All Branches**

**Computer Concepts and C – Programming**

Time: 3 hrs.]

[Max. Marks:100

*Note: 1. Answer any FIVE full questions choosing atleast one from Part-A.*

**PART-A**

1.
  - a. Explain briefly the various generations of computer. (06 Marks)
  - b. Distinguish between primary and secondary memory with examples. (06 Marks)
  - c. A disk pack has 800 tracks per surface. There are 24 sectors per track and 512 bytes per sector.
    - i) What is the storage capacity of one surface?
    - ii) What is the storage capacity of the disk pack? (08 Marks)
2.
  - a. What is an Operating system? Name any three common operating systems that are currently used. (06 Marks)
  - b. Explain through examples the use of wild cards in DOS and UNIX. (06 Marks)
  - c. Give brief explanation of the following:
    - i) Electronic Mail
    - ii) WWW
    - iii) LAN
    - iv) URL

(08 Marks)

**PART-B**

3.
  - a. Explain the meaning of a flow chart with an example to solve a given quadratic equation. (10 Marks)
  - b. Differentiate between keywords and identifiers. Give two examples for each. (06 Marks)
  - c. Explain briefly about the header files available with C. (04 Marks)
4.
  - a. Explain assignment statement. How is it different from algebraic expression? Substantiate with examples. (04 Marks)
  - b. Identify the wrong expressions from the following expressions and find the values of correct expressions. Take  
 $\text{int } i=4, j=2, k=6, a=2, n=8;$ 
    - i)  $P = ++K;$
    - ii)  $a = -++K/2;$
    - iii)  $m = ++i --K;$
    - iv)  $a = 2b++;$
    - v)  $K = i++ + ++j;$
    - vi)  $--i ++;$
  - c. Explain the formatted input / output statements used to input character and float variables, with examples. (06 Marks)

(10 Marks)

- 5 a. Explain the control statements with examples. (06 Marks)  
 b. Explain the unbuffered input and output functions that are used to input / out a character. (04 Marks)  
 c. Write a C program to find the grade of steel samples considering the following conditions:  
 i) Tensile strength  $\geq 700 \text{ kgf/cm}^2$   
 ii) Rockwell hardness  $\geq 200$   
 iii) Carbon content  $\leq 6\%$ .  
 When condition i), ii) and iii) are satisfied grade is 'A'  
 Condition i) and ii) are satisfied grade is 'B'  
 Condition i) and iii) are satisfied grade is 'C'  
 Condition ii) and iii) are satisfied grade is 'D'  
 Condition i) or ii) or iii) are satisfied grade is 'E', otherwise grade is 'F'. (10 Marks)
- 6 a. Compare while loop and do-while loop. Give one example. (06 Marks)  
 b. Write a program by using for loop to evaluate the series:  

$$\text{Sum} = X - \frac{X^3}{3!} + \frac{X^5}{5!} - \frac{X^7}{7!} + \dots + \frac{X^n}{n!}$$
 (10 Marks)  
 c. How are two dimensional arrays initialized? Explain with example. (04 Marks)
- 7 a. Write a program to input five numbers through the keyboard. Compute and display the sum of even numbers and product of odd numbers. (10 Marks)  
 b. Describe the two ways of passing parameters to functions. When do you prefer to use each of them? Give examples. (10 Marks)
- 8 a. Write a program that would sort a list of names in alphabetical order. (12 Marks)  
 b. Write a program to display the value of variable and its location using pointer. (08 Marks)

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<b>OLD SCHEME</b>
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**First / Second Semester B.E. Degree Examination, July 2006**  
**Common to all Branches**

**Computer Concepts and 'C' Programming**

Time: 3 hrs.]

[Max. Marks:100

- Note:** 1. *Answer any Eight questions from questions no. 1 to 12 and any SIX from question no. 13 to 21.*  
 2. *Questions no. 1 to 12 carry FIVE marks each and questions no. 13 to 21 carry TEN marks each.*  
 3. *Answers must be specific and precise.*  
 4. *Draw neat sketches wherever necessary.*  
 5. *The programs must be properly documented wherever required.*

- 1 Compare the characteristics of primary and secondary storage devices. (05 Marks)
- 2 Compare machine languages with assembly language (05 Marks)
- 3 Give the scope rules for local variables and global variables. (05 Marks)
- 4 Why are input and output devices necessary? Mention any two input and two output devices used in PCs commonly. (05 Marks)
- 5 What is a LAN? What are its applications? (05 Marks)
- 6 Differentiate between a Personal Computer and a Mainframe Computer. (05 Marks)
- 7 Write a program in C that accepts temperature in degrees Celsius and prints out equivalent temperature in degrees Fahrenheit. (05 Marks)
- 8 Give the syntax of the switch statement and explain how it works. (05 Marks)
- 9 State the rules to be followed in choosing a valid variable name in C. (05 Marks)
- 10 What is the output of the following program?  
 Main ()  
 {  
   Int x = 2, y = 3, s1, s2;  
   s1 = x + (++y);  
   s2 = ++x + y++;  
   printf ( "%d, %d\n", s1, s2 );  
 }  
 (05 Marks)  
 Contd...2

- 11 What is a pointer ? How to declare and initialize a pointer ? (05 Marks)
- 12 What is the value of a after executing the following statements ?  
Int a = 4, b = 2 ; Float x = 2 , y = 3 ; A = x / y + a / b ; (05 Marks)
- 13 With the help of a neat diagram, explain the functions of each of the units of a digital computer. (10 Marks)
- 14 a. Write equivalent C expressions for the mathematical expression  
i)  $\frac{b^2}{|c|} + \sqrt{3a^2 + 8b}$  ii)  $P = \sqrt{x^2 + \frac{1}{\tan^{-1}(x^y)}}$  (05 Marks)  
b. Distinguish between break and continue statements. (05 Marks)
- 15 a. Explain the following terms : i) Batch Processing ii) Time Sharing Systems. (05 Marks)  
b. Write a program in C that reads in an integer and prints it out with the digits reversed and to check whether the number is a palindrome. (05 Marks)
- 16 a. Give the syntax and function of any four DOS commands used for manipulating files. (05 Marks)  
b. What are user defined functions ? Why are they needed ? (05 Marks)
- 17 Write a program in C to find all the roots of a quadratic equation for any values of the coefficients a, b and c. Include suitable comments to explain the logic of your program. (10 Marks)
- 18 a. What is an array ? How is it different from the structure ? (05 Marks)  
b. Write a program in C to sort the given set of integers in the ascending order. (05 Marks)
- 19 Write a C language function to find the factorial of a given number. Using that function, write a program in C to find the value of the number of combinations possible in choosing r items from a total of n items. (10 Marks)
- 20 a. Explain any two string handling functions in C language by giving examples. (05 Marks)  
b. Define a structure type struct personnel that consists of three fields as follows :  
i) person's name as a field of 20 characters  
ii) date of joining as dd-mm-yy and  
iii) salary as a number in the form xxxxxx.xx, where each x represent a decimal digit.  
Using this structure, write a program in C to read the relevant information from the key board and display the same on the monitor. (05 Marks)
- 21 a. What is a compiler ? Name any two compilers you are aware of. (05 Marks)  
b. Give the syntax of the while ... do loop. Explain its use in C programs. (05 Marks)

First / Second Semester B.E. Degree Examination, Dec. 07 / Jan. 08

**Computer Concepts and C - Programming**

Time: 3 hrs.

Max. Marks:100

**Note :** Answer any FIVE full questions choosing atleast one from Part A.

**Part A**

- Explain with a diagram the Von Neumann concept of stored program computer. (10 Marks)
- Classify the following printers into impact / nonimpact types. (05 Marks)
  - Dot matrix
  - Laser jet
  - Line
  - Daisy wheel
  - Thermal
- What are volatile and non volatile memories? Give 2 examples for each. (05 Marks)
- What is O.S? Give the functions of an operating system. (05 Marks)
- List the advantages of LAN, WAN and Internet. (06 Marks)
- List and give their usage of any five UNIX commands. (05 Marks)
- Differentiate between interpreter and editor. (04 Marks)

**Part B**

- Give both flow chart and algorithm to test whether a given number is prime or not. (10 Marks)
- Classify the following into valid and invalid variable names in C, if invalid give reasons: (10 Marks)
  - int
  - \$roll no
  - \_name I
  - James bond
  - I class.
- Explain assignment statement. How is it different from algebraic expression? Substantiate with examples. (04 Marks)
- Identify the wrong expressions from the following expressions and find the values of correct expressions. Take  
 $\text{int } I = 4, j = 2, k = 6, a = 2, n = 8;$ 
  - $P = ++K;$
  - $a = -++K/2;$
  - $m = ++I - K;$
  - $a = 2b++;$
  - $K = I++ + ++j;$
  - $--I ++$
 (06 Marks)
- Explain the formatted input / output statements used to input character and float variables, with examples. (10 Marks)
- Explain the use of break and continue statements in a loop. Supplement your explanation with an example. (06 Marks)
- Compare while loop and do-while loop. Give one example for each. (06 Marks)
- Write a program to print all the points with integer coordinates enclosed within a circle of radius 4 units from origin. (08 Marks)
- You are given sufficient number of 5 paise, 10 paise, 20 paise, 25 paise and 50 paise denomination coins. Given a value of R rupees and P paise, write a C program to determine the minimum number of coins to get the required value. Use any looping construct to implement the program. (10 Marks)
- Given two sets A and B of integers, write a program to read them, determine its UNION and INTERSECTION and print the resultant sets. (10 Marks)
- Write a program to input five numbers through the keyboard. Compute and display the sum of even numbers and product of odd numbers. (10-Marks)
- Describe the two ways of passing parameters to functions. When do you prefer to use each of them? Give examples. (10 Marks)
- Write a program that would sort a list of names in alphabetical order. (12 Marks)
- Write a program to display the value of variable and its location-using pointer. (08 Marks)





**First/Second Semester B.E. Degree Examination, July 2007**  
**Common to All Branches**

**Computer Concepts and 'C' Programming**

Time: 3 hrs.]

[Max. Marks:100

*Note : Answer any FIVE full questions choosing atleast TWO  
from each part.*

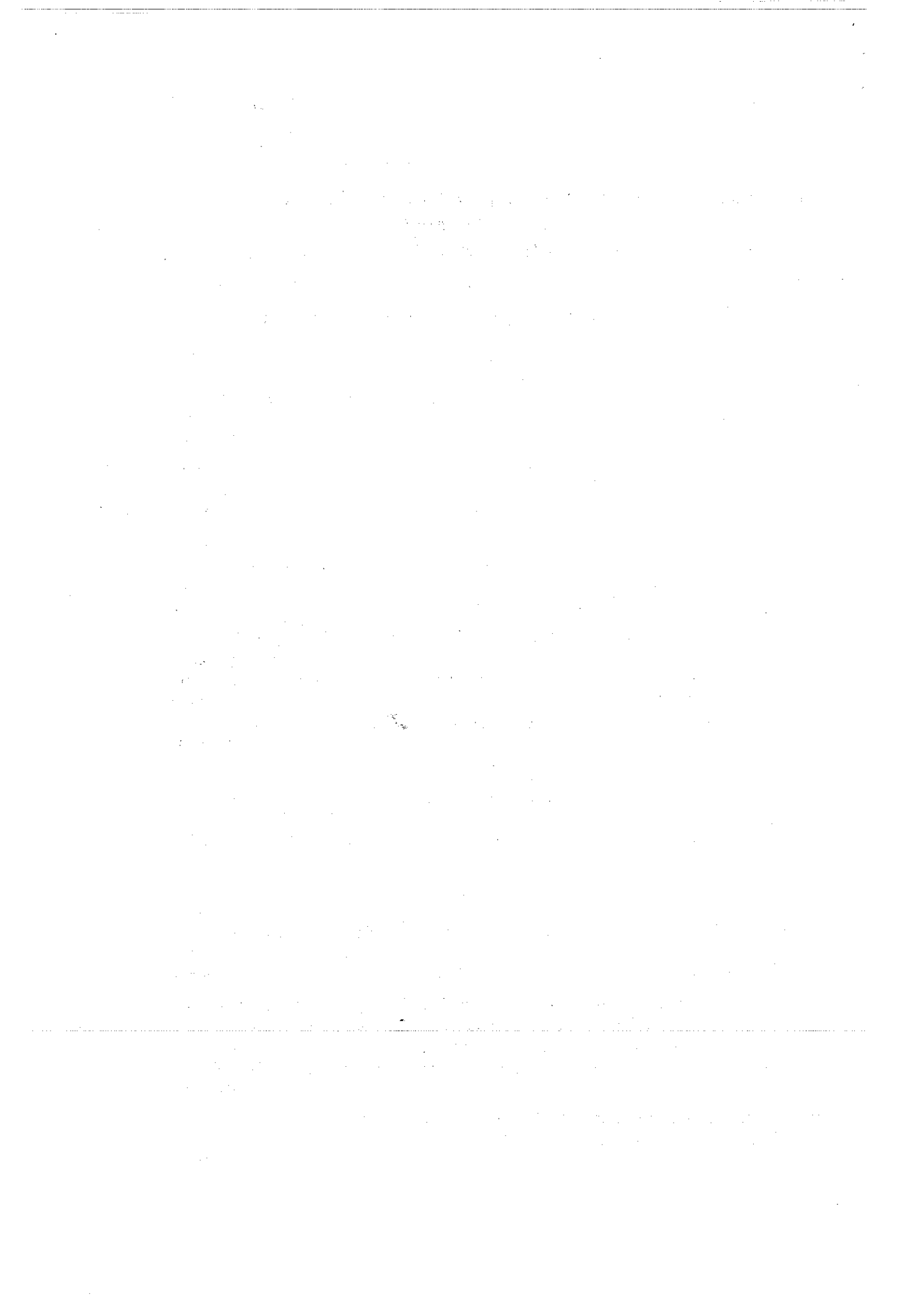
**PART - A**

- 1 a. Explain the features of computers available for individuals and organizations. (10 Marks)
- b. Discuss the construction and operation of CRT monitor. (10 Marks)
- 2 a. Mention any five standard I/O ports available in a computer. (05 Marks)
- b. What is CACHE? Why it is used? Explain. (05 Marks)
- c. Explain the factors affecting the processing speed of computers. (10 Marks)
- 3 a. What is DOS? Explain the benefits of using DOS. (06 Marks)
- b. Differentiate between graphical user interface and command user interface. (06 Marks)
- c. Explain the features of the various network topologies. (08 Marks)
- 4 a. Define algorithm. Develop an algorithm to find the smallest of any given three input numbers. (06 Marks)
- b. Define identifiers, constants and keywords. Give the various rules for formulating identifiers in 'C' language. (08 Marks)
- c. Classify operators in 'C' language based on functionality. Give suitable examples. (06 Marks)

**PART - B**

- 5 a. Explain putchar ( ) and getchar ( ) functions with examples. (05 Marks)
- b. Explain break statement in 'C'. (05 Marks)
- c. Write a 'C' program to calculate area of circle, rectangle and triangle using switch. (10 Marks)
- 6 a. Differentiate between while and do while loops. Give one example for each. (08 Marks)
- b. Write a 'C' program to find whether a given integer is prime. Use FOR loop. (08 Marks)
- c. What is a nul statement? Explain its usefulness. (04 Marks)
- 7 a. Write a 'C' program to read 'N' integer numbers, arrange them in ascending order into one dimensional array. By using binary search, find the given key integer is present or not in the array. Display suitable message. (12 Marks)
- b. Explain one dimensional and two dimensional arrays with an example for each. (08 Marks)

Write an user defined function to find the product of two matrices of order (  $n \times n$  ) and use it in a main function to compute  $A^3 + A^2 + A$ . where 'A' is a matrix of order (  $n \times n$  ). (20 Marks)



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<b>NEW SCHEME</b>
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I/II Semester B.E. Degree Examination, Dec.06/Jan. 07  
Common to all Branches

**Computer Concepts and C Programming**

Time: 3 hrs.]

[Max. Marks:100

*Note: Answer any FIVE full questions selecting at least TWO full questions from each part.*

**PART A**

- 1 a. With a neat diagram, explain the functional organization of a digital computer. (10 Marks)
- b. Discuss the operation of the following devices (10 Marks)
  - i) Pen ii) Game Controller iii) Touch Screen.
- 2 a. With examples define data and information. (10 Marks)
- b. Distinguish between primary memory and secondary memory. Give examples. (10 Marks)
- 3 a. Briefly explain the classification of operating systems, with examples of each. (08 Marks)
- b. Explain the features of LINUX operating system. (06 Marks)
- c. With the help of an example, illustrate how e-mails are sent and received. (06 Marks)
- 4 a. Discuss the various simple data types supported in C language. Mention their range and size. (08 Marks)
- b. Classify operators in C language based on number of operands. Give suitable examples. (06 Marks)
- c. Compare and contrast algorithms and flow charts. (06 Marks)

**PART B**

- 5 a. Write a C program to find whether given number is prime or not. Output the given number with suitable message. (08 Marks)
- b. Explain the following with examples and flow chart. (12 Marks)
  - i) Simple 'if'                      iii) 'Nested if'
  - ii) 'Go to'                              iv) 'if ... else' ladder.
- 6 a. With syntax, flow chart and example, explain the working of 'for' loop. (08 Marks)
- b. Write a program using 'while' loop to compute the following series. (08 Marks)
 
$$1 + x + x^2 + \dots + x^n$$
 for a given value of n.
- c. Write a note on using 'go to' in loops. (04 Marks)
- 7 a. Write a C program to generate Fibonacci numbers using arrays. (12 Marks)
- b. Write a C program to read n elements of a one dimensional array and find the largest of them. (08 Marks)
- 8 a. Discuss the necessity of user defined functions in developing a program. (08 Marks)
- b. Write a function that finds the smallest of 4 numbers in an array n. Use it in a main function to find the smallest of arrays A, B, C and D each with 4 elements. (12 Marks)

