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**NEW SCHEME**

SRINIVAS INSTITUTE OF TECHNOLOGY  
LIBRARY, MANGALORE

**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  
i) Pen ii) Game Controller iii) Touch Screen. (10 Marks)
- 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.  
i) Simple 'if'                      iii) 'Nested if'  
ii) 'Go to'                              iv) 'if ... else' ladder. (12 Marks)
- 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.  
 $1 + x + x^2 + \dots + x^n$  for a given value of n. (08 Marks)
- 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)

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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 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 getch ( ) 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)
- 8 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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**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 two questions from each part A and part B .**

**PART - A**

- 1 a. Explain the functional organization of a digital computer. (10 Marks)
- b. Discuss the operation of – i) Digital pen ii) Touch screen iii) Game controller. (06 Marks)
- c. Classify the following printers into impact /non impact types – i) Dot matrix ii) Laser jet iii) Line printers iv) Daisy wheel. (04 Marks)
- 2 a. What are the differences between primary memory and secondary memory? (06 Marks)
- b. Explain briefly about address bus and data bus. (04 Marks)
- c. What are the categories of storage devices based on the technology? (10 Marks)
- 3 a. Briefly explain the classification of operating systems with examples for each. (10 Marks)
- b. What are the primary functions of operating system? (06 Marks)
- c. What are the various benefits of using a computer network? (04 Marks)
- 4 a. What are the advantages of writing algorithm? (06 Marks)
- b. Write an algorithm and flowchart to find whether a given number is prime or not. (10 Marks)
- c. What are keywords? Explain any three keywords available in 'C'. (04 Marks)

**PART - B**

- 5 a. Explain the following operators with examples. (06 Marks)
  - i) Logical operators
  - ii) Relational operators
  - iii) Conditional operators.
- b. What would be the value of a after the execution of the following expression. Assume the initial value of a = 5. Neatly mention the steps. (08 Marks)
  - i)  $a += (a++) + (++a)$ ,
  - ii)  $a = (--a) - (a--)$ .
- c. Give the basic structure of a C – program and write a C – program to find the largest of three given integer values. (06 Marks)
- 6 a. Write syntax of the followings – i) If – statement ii) The nested if – statement iii) The else – if ladder statement iv) Switch statement. (08 Marks)
- b. Write a C – program to generate the prime numbers in the range n1 to n2. (06 Marks)
- c. What is the difference between break and continue statement? Give the example in each. (06 Marks)
- 7 a. Explain the declaration of single dimension array and two dimension array. (04 Marks)
- b. Write a C – program to input N integer numbers into a single dimension array. Sort them in ascending order using Bubble sort technique. Print both the given array and sorted array with suitable headings. (08 Marks)
- c. Explain the categories of functions. (08 Marks)
- 8 a. Write C user defined functions (08 Marks)
  - i) To input N real numbers in to a single dimension array.
  - ii) Compute their mean
  - iii) Compute their variance
  - iv) Compute their standard deviation
 Using these functions, write a C program to input N real numbers into a single dimension array, and compute their mean, variance, and standard deviation. Output the computed results with suitable headings. (10 Marks)
- b. Write C user defined functions :
  - i) To input N integer numbers in to single dimension array.
  - ii) To sort the integer numbers in ascending order using bubble sort technique.
  - iii) To print the array elements.
 Using these functions write a C–program to input N integer numbers into a single dimension array, sort them in ascending order, and print both the given array and the sorted array with suitable headings. (10 Marks)

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**First/Second Semester B.E. Degree Examination, June / July 08**  
**Computer Concepts and 'C' Programming**

(b)

Time: 3 hrs.

Max. Marks:100

**Note : Answer any FIVE full questions,  
selecting atleast two from each part.**

**PART - A**

- 1 a. Differentiate between analog and digital computers. (05 Marks)
- b. With the help of block diagram explain the different functional units of digital computer. (10 Marks)
- c. What is an assembler? How does it differ from a compiler? (05 Marks)
- 2 a. Explain the following storage devices with figure.  
i) Magnetic tape ii) Magnetic disk. (10 Marks)
- b. Briefly discuss the following :  
i) USB ii) SCSI. (05 Marks)
- c. Differentiate between primary memory and secondary memory. (05 Marks)
- 3 a. Define operating system. What are the primary functions of the operating system? (08 Marks)
- b. Define the following terms. HUB, BRIDGE, SWITCH and ROUTER. (08 Marks)
- c. What is network? What are various types of topologies? (04 Marks)

**PART - B**

- 4 a. What is the meaning of algorithm? Give its characteristics. (06 Marks)
- b. List out rules to be followed for defining variable. Give one example for each rule with invalid case. (08 Marks)
- c. Write program to find the greatest of 3 numbers using conditional operator. (06 Marks)
- 5 a. Write a note on :  
i) Break statement ii) Continue statement (04 Marks)
- b. Write a program to find the roots of a quadratic equation using switch statement. (10 Marks)
- c. What are the verities of if statement? Explain any two. (06 Marks)
- 6 a. Differentiate between while and do-while statement. (05 Marks)
- b. Using do-while, write a program to generate N prime numbers. (10 Marks)
- c. With general syntax explain any three forms of for statement. (05 Marks)
- 7 a. With an example explain how the elements of two dimensional array is stored in row major and column major order, if the base address is 4000 and size of integer is 2 bytes. (05 Marks)
- b. Write a program to sort the elements of an array in ascending order by selection sort. (10 Marks)
- c. What are the advantages and disadvantages of binary search? (05 Marks)
- 8 a. What is a function? What are its advantages? (05 Marks)
- b. What are the different ways of passing parameters to the functions? Explain. (05 Marks)
- c. Write functions to perform the following :  
i) To find the length of the string  
ii) To check whether the string is palindrome or not. (10 Marks)

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**First/Second Semester B.E. Degree Examination, Dec.08/Jan.09**  
**Computer Concepts and C programming**

Time: 3 hrs.

Max. Marks:100

- Note:** 1. Answer any FIVE full questions, selecting at least TWO questions from each part.  
2. Answer all objective type questions only in first & second writing pages.  
3. Answer for objective type questions shall not be repeated.

**PART – A**

- 1 a. (i) Which of these is a computer for an organization?  
(A) Work station (B) Tablet computer (C) Main frame (D) Smart phones
- (ii) Which of these is an example of Hand held PCs?  
(A) RAM (B) PDA (C) BUS (D) CMOS
- (iii) Approximate value of one Terabyte computer memory & its storage is  
(A)  $10^9$  bytes (B)  $10^{10}$  bytes (C)  $10^{12}$  bytes (D)  $10^{15}$  bytes
- (iv) Which of these keys is not called modifier key?  
(A) START (B) SHIFT (C) ALT (D) CTRL (04 Marks)
- b. Describe the computers for individual users. (06 Marks)
- c. What is information processing cycle? Explain. (05 Marks)
- d. Write a note on types of monitors. (05 Marks)
- 2 a. (i) Which of the following is NOT a standard text code system?  
(A) ASCII (B) LCD (C) UNICODE (D) EBCDIC
- (ii) Which of these is NOT a part of CPU  
(A) CU (B) ALU (C) L2-CACHE (D) L3-CACHE
- (iii) A laser printer's speed is measured in \_\_\_\_\_  
(A) cps (B) ppm (C) dpi (D) ltpm
- (iv) Which of these is a hot swappable bus  
(A) Local Bus (B) USB (C) PCI (D) AGP (04 Marks)
- b. Discuss the factors that affect the speed of a computer (10 Marks)
- c. How to optimize disk performance? Explain. (06 Marks)
- 3 a. (i) Which of the following acts as the primary controlling mechanism for the computer's hardware  
(A) RAM (B) CPU (C) CDROM (D) OS.
- (ii) Which of these is a freeware operating system  
(A) MS-DOS (B) WIN-95 (C) WIN-XP (D) LINUX.
- (iii) \_\_\_\_\_ is a device that connects two LANS or two segments of the same LAN.  
(A) Hub (B) Bridge (C) Switch (D) Router.
- (iv) E-mail is the system for exchanging messages through a \_\_\_\_\_.  
(A) Client (B) Program (C) Network (D) Backbone. (04 Marks)
- b. Describe the different network topologies. (08 Marks)
- c. List and explain four major types of operating systems. (08 Marks)

- 4 a. (i) Which of the following is a 'C' keyword?  
 (A) Int (B) else (C) scanf (D) character.
- (ii) Which of the following is the valid hexa integer  
 (A) oabc (B) oxabc (C) xabc (D) abc
- (iii) If  $p = 2$ ,  $q = 3$  &  $r = 4$ , what is the output of following 'C' statement  
`Printf("%d", p&q | r);`  
 (A) 6 (B) 4 (C) 2 (D) 0.
- (iv) What is output of following 'C' statement  
`x = 3, y = 5;`  
`y = + x - y;`  
`y = ++y;`  
`printf ("%d", y);`  
 (A) Error (B) 1 (C) 0 (D) -1. (04 Marks)
- b. What is an algorithm? List and explain the characteristics of an algorithm. (04 Marks)
- c. Write an algorithm and draw a flowchart to find factorial of a given integer. (06 Marks)
- d. Explain with examples:  
 (i) Increment operators (ii) Decrement operators (iii) Conditional operator. (06 Marks)

## PART - B

- 5 a. (i) Format specifier for inputting real numbers is \_\_\_\_\_  
 (A) %d (B) %c (C) %f (D) %s
- (ii) The output of following code is  
`x = 98.7654;`  
`printf ("%7.2F", x);`  
 (A) 98.765400 (B) 98.760000 (C) 98.77 (D) 98.000000
- (iii) Which of the following 'C' statement branches unconditionally from one point to another point in the program  
 (A) if (B) goto (C) switch (D) if else
- (iv) Assuming  $x = 5$ ,  $y = 0$ ,  $z = 0$  initially, what is the value of  $z$  after execution of the following code segments?  
`if (x == 0 || x && y)`  
`if (!y)`  
`z = 1;`  
`else`  
`z = 2;`  
`else`  
`z = 3;`  
 (A) 0 (B) 1 (C) 2 (D) 3 (04 Marks)
- b. With an example explain switch statement and significance of break in switch block. (10 Marks)
- c. Write a 'C' program to find the roots of a quadratic equation. (06 Marks)

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- 6 a. (i) A for loop with No test condition is known as \_\_\_\_\_ loop.  
(A) finite (B) infinite (C) controlled (D) None of these.
- (ii) Which of the following looping construct is exit controlled loop?  
(A) while (B) do....while (C) for (D) None of these.
- (iii) What is the output of the following code segment?  
x = 4;  
do  
printf("\t % d", x)  
while (x -- >= 0);  
(A) Error (B) 4 3 2 1 (C) 4 3 2 1 0 (D) 4 3 2 1 0 -1
- (iv) What is the output of the following code segment?  
For (i = 0, x = 4; i < 5 && x; i++)  
printf("%d \t", x = x >> 1);  
(A) 2 1 0 0 0 (B) 2 1 0 -1 -2 (C) 2 (D) 2 1 (04 Marks)
- b. Write a 'C' program using do....while loop to calculate and print first N Fibonacci numbers (08 Marks)
- c. Using for loop, write 'C' program to generate N prime numbers. (08 Marks)
- 7 a. (i) Which of the following declaration has error?  
(A) int N[ ]={0, 0, 0}; (B) int M[3][2] = {1, 2, 3};  
(C) char ch[ ] = "vtu"; (D) int Num [2, 4] = {{0,1},{1,2},{2,3},{3,4}};
- (ii) What is the memory occupied by the array: int A[10][5]  
(A) 15 bytes (B) 150 bytes (C) 100 bytes (D) 30 bytes
- (iii) If base address of the int p[5][5] is 5000 then output of :  
printf("%d" & p[2][0]); is  
(A) 5010 (B) 5004 (C) 5006 (D) 5020
- (iv) Arrays can be initialized at  
(A) Compile time (B) Run time (C) Both A & B (D) none of these (04 Marks)
- b. Explain Horner's method to evaluate a polynomial and write a 'C' program for the same. (06 Marks)
- c. What is an array? What are its advantages & disadvantages? (04 Marks)
- d. Write a 'C' program to input N integer numbers into a single dimension array. Conduct a linear search for a given key integer number. Report success or failure with suitable message. (06 Marks)
- 8 a. (i) Which of the following return statement in a function has error?  
(A) return; (B) return(0); (C) return (expression); (D) None of these.
- (ii) Parameter passed as arguments to the function call are called as:  
(A) Actual parameters (B) Formal parameters  
(C) No parameters (D) None of the above.
- (iii) In function prototype, specifying \_\_\_\_\_ is optional.  
(A) return type (B) Parameter name (C) Parameter data type (D) All of these.
- (iv) A variable declared in a function is called \_\_\_\_\_.  
(A) Actual variable (B) Formal variable  
(C) Local variable (D) Global variable. (04 Marks)
- b. Without using Global variables, write a 'C' program, by implementing these functions  
(i) Read N array elements (ii) Print N array elements and (iii) Conduct binary search for a given key integer number in N array elements. (08 Marks)
- c. With examples, explain different methods of passing parameters to a function. (08 Marks)

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**First / Second Semester B.E. Degree Examination, June-July 2009**

**Computer Concepts and 'C' Programming**

Time: 3 hrs.

Max. Marks:100

- Note :
1. Answer any Five full question, choosing at least two from each part.
  2. Answer all objectives type questions only in OMR sheet page 5 of the Answer Booklet.
  3. Answer to the objective type questions on sheets other than OMR will not be valued

**PART - A**

1. a. i) Which of the following units represent the largest amount of data?  
A) Kilo byte    B) Tera byte    C) Giga byte    D) Mega byte
  - ii) Which type of s/w is used for creating slide show?  
A) Web design s/w    B) Presentation s/w  
C) Word processing s/w    D) Spread sheet s/w.
  - iii) In most programs you can press this key to get help:  
A) ESC    B) F10    C) Alt    D) F1
  - iv) Resolution is determined for  
A) Monitor    B) Video controller    C) CPU    D) System unit. (04 Marks)
  - b. What are the four phases of information processing cycle? Explain briefly. (08 Marks)
  - c. Define the following terms, give an example for each  
i) System software    ii) Application s/w. (03 Marks)
  - d. Explain how CRT displays image or text on the screen. (05 Marks)
2. a. i) The standard that promises to provide enough characters to cover all the world's languages  
A) ASCII    B) Unicode    C) Extended ASCII    D) EBCDIC
  - ii) Memory that loses data when power is turned off is considered as  
A) Volatile memory    B) Static memory  
C) Dynamic memory    D) Refreshed memory.
  - iii) What does the term SCSI stands for?  
A) Small computer software interface    B) Small computer storage interface .  
C) Small computer system interface    D) Small computer standard interface
  - iv) Floppy disks and magnetic Disks are examples of  
A) Optical storage    B) Solid state storage  
C) Magnetic storage    D) Electrical storage (04 Marks)
  - b. What is the difference between volatile and non-volatile memory? (03 Marks)
  - c. What are the factors that affect the processing speed? Explain any two. (06 Marks)
  - d. With neat sketch, explain working of magnetic disk unit. (07 Marks)
3. a. i) Acronym DOS stands for  
A) Distributed operating system    B) Driver operating system  
C) Disk operating system    D) Diskless operating system.
  - ii) Windows 95 was the first version of windows support which standard for connecting new hardware?  
A) GUI    B) Plug and play    C) Enterprise directory    D) Operating system
  - iii) Collection of related web pages is called  
A) Web book    B) Website    C) Web dictionary    D) Search Engine
  - iv) E-mail is a system for exchanging messages through a  
A) Client    B) Program    C) Network    D) Backbone (04 Marks)
  - b. What are the primary functions of operating system? (02 Marks)

- c. What are the various hardwares used in computer Network? Also give their functions. (10 Marks)
- d. Differentiate between LAN and WAN. (04 Marks)
- 4 a. i) What does the oval sign represent in a flow chart?  
A) Start / End    B) Decision    C) Process    D) None of the above
- ii) Which character marks the end of each statement in C?  
A) ;    B) :    C) }    D) {
- iii) To find out the remainder after dividing the number by other number, the operator is  
A) /    B) ^    C) %    D) ÷
- iv) 

```
int main ( )
{ int I = 5;
  print f ( " %d %d %d", i ++, i, ++i);
  return 0;
}
```

 The output is  
A) 567    B) 556    C) 667    D) 666 (04 Marks)
- b. Draw a neat flow chart to exchange two numbers without using a temporary variable. (05 Marks)
- c. What do you mean by mixed mode operation? Explain with an example. (06 Marks)
- d. Evaluate the following expressions independent to each other, the declaration and initialization is as follows: `int i = 3, j = 4, k = 2;`  
i) `i ++ - j --`    ii) `++k % --j`    iii) `j + 1 / i - 1`    iv) `j ++ / i --`    v) `++i / ++j + 1`. (05 Marks)

### PART - B

- 5 a. i) In which of the following header the function `getchar ( )` exist?  
A) `iostream . h`    B) `stdio . h`    C) `Function . h`    D) `getchar . h`
- ii) Which of the following command will place the program control out of the loop when it gets executed  
A) `goto`    B) `break`    C) `Continue`    D) `end`
- iii) In the following program segment S2 will be executed :  

```
if ( a > b )
  if ( b > c )
    S1;
else
  S2;
```

 if  
A) `b > c`    B) `a <= b`    C) `a < b`    D) `a > b and b ≤ c`
- iv) Which command is used to skip the rest of the loop and carry on from top of the loop again  
A) `Exit`    B) `Continue`    C) `Switch`    D) `break` (04 Marks)
- b. Write a C program to find the roots of a Quadratic equation using if statement. Print the output neatly. (10 Marks)
- c. With a flow chart, explain the selection process of switch statement. (06 Marks)
- 6 a. i) While ( `++ K ≤ n` ) what is the value of K when loop completes, if initial value of K is 1  
A) `n + 1`    B) `n - 1`    C) `n + 2`    D) `n`
- ii) The following for loop prints for ( `i = 1, j = 3; i < 3; i ++, j --` );  

```
print f ( " %d %d", i, j);
```

  
A) 1 3 2 2    B) 1 3 2 2 3 1    C) 31    D) None of these

- iii) Which of the following statements can't be used to transfer control unconditionally to a different statement in 'C' program?  
 A) goto      B) continue      C) For      D) break
- iv) The following do-loop prints, for an initial value of  $c = 2$   
 do  
 { print f (" %d", c);  
 print f (" %d", c - -);  
 } while (c);  
 A) 2 1      B) 2 1 0      C) 2 2 1 0      D) 2 2 1 1.      (04 Marks)
- b. Differentiate between do and while do statement.      (05 Marks)
- c. Write a program to compute the value of Euler's number e, that is used as the base of natural logarithm. Use the following formula. Use while statement.  

$$e = 1 + \frac{1}{1!} + \frac{1}{2!} + \dots \text{ upto } \text{acc} = 0.0001. \quad (08 \text{ Marks})$$
- d. With syntax, explain for loop.      (03 Marks)
- 7 a. i) The amount of storage requires for holding elements of the array depends on  
 A) Size      B) Data type  
 C) Data type and size      D) Run – time requirement
- ii) Array elements are stored in  
 A) Scattered memory location      B) Direct memory location  
 C) Random memory location      D) Sequential memory location
- iii) Consider the following array definition. The address of an element 6 in the array is  
 $\text{int } a [ ] [4] = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$   
 A)  $a [3] [3]$       B)  $a [1] [1]$       C)  $a [3] [1]$       D) None of these
- iv) What will happen if we initialize too few elements of an array?  
 A) Only those elements will have initialized values      B) Compilation error  
 C) Unused element will be set to zero      D) None of the above (04 Marks)
- b. What does the name of the array signify? What are the different stages in which arrays can be initialized? Give an example for each.      (06 Marks)
- c. Write a 'C' program to find the product of two matrices by checking the compatibility of two matrices. The program must read the sizes of each matrix and their elements after checking the compatibility.      (10 Marks)
- 8 a. i) Using keyword void before function name means  
 A) Returns nothing      B) Has no argument      C) both A and B      D) None of these
- ii) The main ( ) is a  
 A) Library function      B) user defined function      C) Keyword      D) None of these
- iii) A static variable  
 A) Cannot be initialized      B) is initialized once at the commencement of execution and cannot be changed at run time      C) Retains its value throughout the execution of the program      D) Same as the automatic variable. But it is placed at the head of the program.
- iv) A variable declared in a function is called  
 A) Actual variable      B) Formal variable      C) Local variable      D) Global variable      (04 Marks)
- b. What is the need for user-defined functions? Also explain in brief different elements of a user-defined function.      (06 Marks)
- c. Write a function that will generate and print the first n Fibonacci numbers.      (04 Marks)
- d. Discuss the different methods of passing parameters to the function with an example for each.      (06 Marks)





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**First / Second Semester B.E. Degree Examination, Dec.09-Jan.10**  
**Computer Concepts and C Programming**

Time: 3 hrs.

Max. Marks:100

- Note: 1. Answer any FIVE full questions, selecting atleast TWO questions from each Part.**  
**2. Answer all objectives type questions only on OMR sheet, page No 5 of the Answer booklet.**  
**3. Answer to the objective type questions on sheets other than OMR will not be valued.**

**PART - A**

- 1 a. Select the right answers in the following :** **(04 Marks)**
- i) Stylus is used to input data in **(04 Marks)**
    - A) Super computer
    - B) Workstation
    - C) Smart phone and PDA
    - D) None of these.
  - ii) Resolution is measured in terms of
    - A) Dots per inch
    - B) Dot pitch
    - C) Pixels
    - D) None of these
  - iii) The first six alphabetical characters on top row of a standard key board is
    - A) QWERTY
    - B) QEWRTY
    - C) QERWTY
    - D) QYERTW
  - iv) Which of these are also known as PDA s?
    - A) Workstations
    - B) Mainframes
    - C) Hand held PC s
    - D) Super Computers
- b. Explain in brief about optical character recognition (OCR) and also mention its advantages and disadvantages.** **(06 Marks)**
- c. Explain different types of impact and non – impact printers.** **(10 Marks)**
- 2 a. Select the right answers in the following :** **(04 Marks)**
- i) Number of tracks on a standard magnetic disc is **(04 Marks)**
    - A) 79
    - B) 80
    - C) 81
    - D) 78
  - ii) Which of the following can store maximum data?
    - A) Floppy
    - B) Compact disc
    - C) DVD
    - D) Blu ray disc
  - iii) Which of the following converts parallel data to serial data?
    - A) UART
    - B) USB
    - C) SCSI
    - D) MIDI
  - iv) An example for magnetic storage device is
    - A) CD ROM
    - B) Diskette
    - C) DVD
    - D) Flash memory
- b. How are the data stored on a optical device such as CD and how does this differ from storing data on a magnetic device such as Floppy? Explain.** **(08 Marks)**
- c. What are the differences between RAM and ROM?** **(04 Marks)**
- d. Explain the factors that affect the processing speed of a computer.** **(04 Marks)**
- 3 a. Select the right answers in the following :** **(04 Marks)**
- i) GUI is an acronym for **(04 Marks)**
    - A) Geo-graphical usage interface
    - B) Graphical user interface
    - C) Global union of internet
    - D) Geometrical user interface
  - ii) 1 Nibble is equal to
    - A) Half byte
    - B) 2 bits
    - C) 2 bytes
    - D) 8 bits
  - iii) Following is not a network device
    - A) Hub
    - B) Bridge
    - C) Router
    - D) USB
  - iv) Which of the following is not a valid topology?
    - A) Star topology
    - B) Ring topology
    - C) Bus topology
    - D) Grid topology

- b. What is an operating system? What are its primary functions? (04 Marks)
- c. Discuss in brief, the four versions of windows operating system with their merits and demerits. (08 Marks)
- d. Define the following terms : i) URL ii) HTTP iii) IP address iv) WWW. (04 Marks)
- 4 a. Select the right answers in the following : (04 Marks)
- i) Symbol used in flow chart for repetition of a loop is (04 Marks)  
A) Rectangle B) Parallelogram C) Circle D) Hexagon
- ii) If  $X = 1$ ,  $Y = 2$  and  $Z = 3$ , then  $Z + X * \frac{Y}{Z} - Y = ?$   
A) Zero B) 1 C) -1 D) None of these
- iii) Which of the following is a valid integer?  
A) 10,000 B) OX 1234 C) 10 20 D) OX ABCD
- iv) Range of unsigned n bit number is  
A) 0 to  $2^{(n-1)}$  B) 0 to  $2^n$  C) 0 to  $2^{(n+1)}$  D) 0 to  $2^n - 1$
- b. What are tokens? Explain the various types of tokens with examples. (08 Marks)
- c. Write an algorithm and flow chart to find the solution of a quadratic equation. (08 Marks)

**PART - B**

- 5 a. Select the right answers in the following : (04 Marks)
- i) Each case statement in switch is separated by (04 Marks)  
A) Break B) Continue C) Exit D) Goto
- ii) What is the output of the following code?  
main ()  
{  
int X;  
print f("% d", X);  
}  
A) Error B) Garbage value C) X D) Zero
- iii) What is the value of A after execution?  
main ()  
{  
int A = 10; B = 7;  
print f("% d", ++A - B - -);  
}  
A) 10 B) 9 C) 04 D) None of these
- iv) The value of  $\| x > 9 \ \&\& \ y! = 3 \|$  for  $x = 11$  and  $y = 6$  is  
A) Zero B) 1 C) 2 D) -1
- b. Explain the following with syntax : i) if - else statement ii) Simple if iii) nested if - else iv) else if ladder. (08 Marks)
- c. Write a C program using switch statement to perform the following operations between two variables. The operations are 1 - addition, 2 - subtraction, 3 - multiplication, 4 - division and print error message for default statement. (08 Marks)
- 6 a. Select the right answers in the following :
- i) A do - while loop is useful when we want to execute the statements within the loop to be executed (04 Marks)  
A) Only once B) At least once C) Atmost once D) None of these
- ii) Pick the odd one out  
A)  $a = a + 1$  B)  $a ++$  C)  $a += 1$  D)  $a = + 1$

- iii) How many times the statements in loop will executed?  

```

for ( i = 0 ; i > 1 ; i ++ )
{
    Statements ;
}

```

A) 1 time                      B) 2 times                      C) Zero times                      D) Many times
- iv) Which of the following is palindrome?  
A) 1101                      B) 1234                      C) 565                      D) 1010
- b. Explain the following with their syntax : i) for loop ii) while loop iii) Do while (06 Marks)
- c. Write a program to check whether a given number is Palindrome or not. Print suitable statements. (05 Marks)
- d. Write a C program to add the digits of any given integer number. (05 Marks)
- 7 a. i) An array is a group of related data that shares a common (04 Marks)  
A) Name                      B) Address                      C) Index                      D) All of these
- ii) Which of the following is valid array?  
A) `int a [2] [2] = {1, 2}`                      B) `int b [N] = {1, 2, 3}`  
C) `int c [10] = {1.2, 3, 4, 5, 'b', ...}`                      D) `int d [2] = {1, 2, 3}`
- iii) Given `int a[2] [2] = {1, 2, 3, 4}` ; what is the element in 2<sup>nd</sup> row and 1<sup>st</sup> column?  
A) 1                      B) 2                      C) 3                      D) 4
- iv) Number of elements in an array defined by `a[2][2][3]` is  
A) 7                      B) 12                      C) 8                      D) None of these
- b. Write a C program to compute sum of 2 matrices of dimensions (n × n) and output the result matrix using suitable statements. (04 Marks)
- c. Write a C program to input N integers into a single dimensional array and sort them in descending order using Bubble sort technique. Print both given array and sorted array with suitable headings. (08 Marks)
- d. Write a C program to find largest number in a given array of N elements. (04 Marks)
- 8 a. Select the right answers in the following : (04 Marks)
- i) The default return type of function is  
A) void                      B) int                      C) char                      D) float
- ii) Which of the following function prototype is invalid?  
A) `int average (int x , int y , int z)`                      B) `float power (float a , float b)`  
C) `double minimum (float a ; float b)`                      C) none of these.
- iii) A function that calls itself is known as  
A) recursive function                      B) main function  
C) iterative function                      D) none of these
- iv) What happens if actual and formal argument types do not match?  
A) error message will be generated                      B) garbage value will be passed  
C) program will not be executed                      D) none of these
- b. Write a function 'Prime' that returns 1 if its argument is a prime number and returns zero otherwise. (06 Marks)
- c. Write a C program to compute the factorial of a given number using a function. (06 Marks)
- d. Write a user defined function to find larger of two numbers. (04 Marks)

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**First/Second Semester B.E. Degree Examination, May/June 2010**  
**Computer Concepts and C Programming**

Time: 3 hrs.

Max. Marks:100

- Note:**1. Answer any FIVE full questions, choosing at least two from each part.  
2. Answer all objective type questions only on OMR sheet page 5 of the Answer Booklet.  
3. Answer to objective type questions on sheets other than OMR will not be valued.

**PART - A**

- 1 a. i) Some notebook systems can be plugged into one of these devices which give the computer additional features  
A) Port station B) Network station  
C) Workstation D) Docking station.
- ii) Which of the following units represent the largest amount of data  
A) Kilobyte B) Terabyte  
C) Gigabyte D) Megabyte.
- iii) The common keyboard arrangement is called \_\_\_\_\_ layout  
A) QWERTY B) QEWTYR  
C) QYWERT D) QWERYT.
- iv) This type of connection lets a computer communicate with, control and record electronic musical instruments  
A) MDII B) DIMI  
C) MIDI D) DIIM. (04 Marks)
- b. With a diagram, explain the information processing cycle in a digital computer. (08 Marks)
- c. Explain the different specifications on which monitors can be compared. (08 Marks)
- 2 a. i) Memory that loses its data when power is turned off is considered \_\_\_\_\_ memory  
A) Volatile B) Static  
C) Dynamic D) Refreshed.
- ii) This cache holds the most recently used data or instructions  
A) L1 B) L2  
C) L3 D) L4.
- iii) A laptop most likely uses \_\_\_\_\_ memory chips  
A) DIMM B) SO - DIMM  
C) SIPP D) PIPO.
- iv) The telephone line is connected to the \_\_\_\_\_ on the computer  
A) PS2 B) USB  
C) Modem D) Ethernet. (04 Marks)
- b. Briefly explain the specifications on which CPU's performance can be compared. (04 Marks)
- c. Briefly explain the four specialized expansion ports that many PC's possess. (04 Marks)
- d. Explain the following storage devices :  
i) Hot swappable hard disk  
ii) DVD. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank page  
2. Any revealing of identification, compulsory evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

- 3 a. i) To remove data from one document and place it in another, one can use the \_\_\_\_ and \_\_\_\_ commands
- A) Copy, paste  
B) File, open  
C) Save, save as  
D) Cut, paste
- ii) Which of the following is not a type of operating systems
- A) Multi user – multitasking  
B) Multi user – single tasking  
C) Single user – single tasking  
D) Single user – multitasking.
- iii) In a \_\_\_\_\_ network, all devices are connected to a device called a hub and communicate through it
- A) Bus  
B) Star  
C) Ring  
D) Mesh.
- iv) Every webpage has a unique address called
- A) VRL  
B) URL  
C) RLI  
D) PLL. (04 Marks)
- b. Briefly explain the different functions performed by the O.S. (04 Marks)
- c. Discuss the different network topologies. (08 Marks)
- d. Briefly explain any two internet services. (04 Marks)

- 4 a. i) A step by step procedure to solve a given problem is called
- A) Logarithm  
B) Flowchart  
C) Algorithm  
D) Utility.
- ii) C language has \_\_\_\_\_ types of tokens.
- A) Four  
B) Six  
C) Five  
D) Seven.
- iii) Which of the following is equivalent to the operator  $!(x >= y)$
- A)  $x < y$   
B)  $x! = y$   
C)  $x > y$   
D)  $x <= y$ .
- iv) Identify unnecessary parenthesis in the arithmetic expression  $((x - (y/5) + z) \% 8) + 25$
- A) Around  $y/5$   
B) Around  $x - (y/5) + z$   
C) Both (A) and (B)  
D) None of these. (04 Marks)
- b. Define the following, with examples
- i) Token  
ii) Keyword  
iii) Identifier  
iv) Variable. (08 Marks)
- c. Explain the following operators, with examples
- i) Relational  
ii) Increment  
iii) Conditional  
iv) Special operators. (08 Marks)

**PART - B**

- 5 a. i) For using character functions, which of the following header files must be included?  
A) <char.h>            B) <ctype.h>            C) <text.h>            D) <string.h>.
- ii) The value of switch expression must be of type  
A) Float            B) int            C) Double            D) All of these.
- iii) In the following segment of code, what will be values of x and y after execution, if n assumes a value of 0 (zero)  
x = 1 ; y = 1 ;  
if (n > 0)  
    x = x + 1 ;  
    y = y - 1 ;  
printf ("%d %d", x, y) ;  
A) 0, 0            B) 1, 0            C) 0, 1            D) 1, 1.
- iv) The field specification for reading an integer number is  
A) %wg            B) %wd            C) %wf            D) %we. (04 Marks)
- b. Write a C program to read three integers and print the largest using nested if statement. If all the three integers are equal, appropriate message must be displayed. (08 Marks)
- c. What is formatted output? Explain output of integer and real numbers, using an example for each. (08 Marks)
- 6 a. i) The minimum number of times a do while loop is executed is  
A) 0            B) 1  
C) 2            D) None of these.
- ii) Determine how many times the body of the loop is executed in the given program segment :  
int x = 5, y = 50 ;  
while (x <= y)  
{  
    x = y/x ;  
}  
A) 0            B) 1  
C) infinite            D) error.
- iii) In an exit controlled loop, if the body is executed n times, the test condition is evaluated \_\_\_\_\_ times  
A) n - 1            B) n + 1  
C) n            D) n<sup>2</sup>.
- iv) Given a for loop as :  
for (i = 1 ; i <= 32 ; y)  
    printf ("%d", i) ;  
If this for loop must produce an output of 1, 2, 4, 8, 16, 32, which of the following must replace y?  
A) i = i + 2            B) i = i × 2  
C) i = i/2            D) None of these. (04 Marks)
- b. For a given value of x and n, write a C program to evaluate the series  
 $y = 1 + x + x^2 + x^3 + \dots + x^n$ . (08 Marks)
- c. Write a C program to find GCD of two non - zero integer numbers. If the first number is less than the second, then the program must exchange the two numbers before computing the GCD. (08 Marks)

