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**First/Second Semester B.E. Degree Examination, June 2012**  
**Computer Concepts and C - Programming**

Time: 3 hrs.

Max. Marks:100

**Note:1. Answer 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. Answers to objective type questions on sheets other than OMR will not be valued.****PART - A**

- 1 a. Choose the correct answer : (04 Marks)
    - i) Some notebook systems can be plugged into one of these devices which gives the computer additional features  
 (A) port station (B) network station (C) work station (D) docking station
    - ii) Which of the following is not a modifier key :  
 (A) shift (B) backspace (C) ALT (D) CNTRL
    - iii) The refresh rate of a monitor is measured in \_\_\_\_\_  
 (A) bytes (B) bits (C) hertz (D) centimeters
    - iv) The term dots per inch (dpi) refers to a printer's \_\_\_\_\_  
 (A) speed (B) resolution (C) output (D) color
  - b. Briefly explain the computers used in organisations. (06 Marks)
  - c. Explain with a diagram how a keyboard communicates with the computer. (06 Marks)
  - d. Briefly explain the information processing cycle. (04 Marks)
- 2 a. Choose the correct answer : (04 Marks)
    - i) A computer system that uses a smaller instruction set is said to use \_\_\_\_\_ technology.  
 (A) CISC (B) RISC (C) MISC (D) DISC
    - ii) Which of the following is a common drive interface standard used in PC's?  
 (A) ETC (B) QWERTY (C) EIDE (D) IOU
    - iii) Each side of a standard DVD – ROM disc can hold upto \_\_\_\_\_ of data.  
 (A) 4.7 GB (B) 9.4 GB (C) 17 GB (D) 140 GB
    - iv) Flash memory is an example of \_\_\_\_\_ storage device.  
 (A) Magnetic (B) Optical (C) Solid - state (D) None of these
  - b. What is machine cycle? Briefly explain the parts of a machine cycle. (06 Marks)
  - c. Briefly describe the areas that are created on a disk when it is formatted with FAT file system. (06 Marks)
  - d. What is average access time? How it is measured? (04 Marks)
- 3 a. Choose the correct answer : (04 Marks)
    - i) An operating system is an example of \_\_\_\_\_ software.  
 (A) utility (B) application (C) system (D) none of these
    - ii) A \_\_\_\_\_ is an agreed upon format for transmitting data between the devices.  
 (A) protopology (B) protoplasm (C) prototype (D) protocol
    - iii) A \_\_\_\_\_ is a computer that stores and forwards email messages.  
 (A) mail server (B) mail center (C) mail system (D) mail box
    - iv) In a \_\_\_\_\_ network all devices are connected to a device called hub and communicate through it.  
 (A) bus (B) star (C) ring (D) mesh

- b. Describe the four primary functions of an operating system. (08 Marks)
- c. Explain the uses of networking the computers. (08 Marks)
- 4 a. Choose the correct answer : (04 Marks)
- Which of the following is a valid variable name  
(A) n1 + n2 (B) doubles (C) 3<sup>rd</sup> place (D) int
  - What would be the value of x after execution of the following segment?  
int x,y = 10 ; char z = 'q' ; x = y + z - 'p' ;  
(A) 110 (B) 111 (C) 10 (D) none of these
  - In a flowchart, a parallelogram symbol is used for  
(A) input (B) output (C) input/output (D) none of these
  - Which of the following symbol does not belong to the C character set?  
(A) ^ caret (B) \_ underscore (C) ! exclamation (D) @ at the rate
- b. i) Write the equivalent C statement for  $T = \frac{2m_1m_2}{m_1 + m_2} \cdot g$
- Rewrite the following expression after removing unnecessary parenthesis :  
 $((x - (y/5) + z) \% 8) + 25$
  - What is the value of the expression -14%3?
  - If x = 4 initially, what is the value of x after the following statement is executed :  
x = x ++ ;
  - How many relational operators are supported by C?
  - What is the complement of the relational expression !(x! = y)? (06 Marks)
- c. Define flowchart and algorithm. Write flowchart and algorithm to find factorial of a given integer. (10 Marks)

### PART - B

- 5 a. Choose the correct answer : (04 Marks)
- If the number 98.7654 is to be printed as 9.88e + 01 ~~h~~ ~~h~~ using printf statement ( ~~h~~ is blank), the control string must be set to \_\_\_\_\_.  
(A) % -10.2e (B) % -7.2f (C) % e (D) % f
  - By default the real numbers are printed with a precision of \_\_\_\_\_ decimal places.  
(A) 4 (B) 5 (C) 6 (D) 8
  - The ternary conditional expression using operator '?' could be easily coded using \_\_\_\_\_ statement.  
(A) simple if (B) if - else (C) while (D) else – if ladder
  - Find the value of x and y after the following segment is executed assuming n = 0 :  
int x = 1, y = 1 ;  
if (n > 0)  
    x = x + 1 ;  
    y = y - 1 ;  
    printf ("% d %", x, y) ;  
(A) x = 1, y = 1 (B) x = 1, y = 0 (C) x = 0, y = 0 (D) x = 2, y = 0.
- b. Explain formatted output with an example. (06 Marks)
- c. Explain switch statement with an example. (10 Marks)
- 6 a. Choose the correct answer : (04 Marks)
- Find out how many times the following loop is executed?  
int m = 10, n = 7 ;  
While (m % n >= 0)  
    {  
        m = m + 1 ;  
        n = n + 2 ;  
    }  
(A) 5 (B) 4 (C) 0 (D) infinite

- ii) Which of the following can be configured as a sentinel controlled loop?  
 (A) while loop (B) do – while loop (C) for loop (D) all the three loops
- 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)  $n^2$
- iv) In the following program segment, the print f statement is executed \_\_\_\_\_ number of times.

```
int m = 1, n = 0 ;
for ( ; m + n < 10 ; m ++ , n ++ );
    print f ("% d", m * n);
```

- (A) 5 (B) 6 (C) 1 (D) 0
- b. Write a program to read a positive integer and print the sum of its digits, using a suitable entry controlled loop. (06 Marks)
- c. Differentiate between while and do – while loop. (04 Marks)
- d. Write a program to find whether the given integer is prime or not. (06 Marks)
- 7 a. Choose the correct answer : (04 Marks)
- i) In an 'n' element array, the  $n^{\text{th}}$  element will be stored at the index \_\_\_\_\_.  
 (A) n (B)  $n + 1$  (C)  $n - 1$  (D) None of these
- ii) \_\_\_\_\_ is the process of arranging the elements of an array in order.  
 (A) searching (B) sorting (C) keying (D) scanning
- iii) An array belongs to the \_\_\_\_\_ data type.  
 (A) Fundamental (B) Primary (C) Userdefined (D) Derived
- iv) An array is a \_\_\_\_\_ size sequenced collection of elements of the \_\_\_\_\_ data type.  
 (A) variable, same (B) variable, different (C) fixed, same (D) fixed, different
- b. Explain how 1 – D arrays are declared and initialized. (04 Marks)
- c. Write a C program to read a  $N \times N$  matrix and find the sum of elements of each of its diagonals. (08 Marks)
- d. Write a C program to implement linear search. (04 Marks)
- 8 a. Choose the correct answer : (04 Marks)
- i) The parameters used in a function call are called as \_\_\_\_\_ parameters.  
 (A) formal (B) informal (C) virtual (D) actual
- ii) Specifying parameter names in a function prototype is \_\_\_\_\_.  
 (A) compulsory (B) optional (C) illegal (D) none of these
- iii) What will be the value of the function call divide (4.5, 1.5) to the following function :  
 divide (float x, float y)  
 {  
     return (x/y) ;  
 }
- (A) 3.0 (B) 3 (C) 0.333333 (D) 0
- iv) A variable declared inside a function is called \_\_\_\_\_ variable.  
 (A) local (B) global (C) external (D) actual
- b. What is the need for user defined functions? (04 Marks)
- c. List and explain the parts of a function body. (06 Marks)
- d. Write a C function which accepts a two dimensional matrix as a parameter and returns the largest element of the matrix. (06 Marks)