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**B.E. / B.Tech (Full Time) End Semester DEGREE EXAMINATIONS,  
NOV / DEC 2012**

**COMMON TO ALL BRANCHES  
First Semester**

**GE 8151 - COMPUTING TECHNIQUES**

(Regulations 2012)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

**PART- A (10 × 2 = 20 Marks)**

1. What are the factors on which the computers are classified ?
2. Convert the decimal value 372 into its equivalent Binary and Hexadecimal numbers.
3. Write the output of the following C program :

```
main ()  
{  
    int a, b, c ;  
    a = 17 + 23 % 7 / 6 ;  
    b = 17 % 23 - 7 - 6 ;  
    c = (2 * b) / (14 % 5) ;  
    printf ("%d %d", a, c) ;  
}
```

4. Combine the following 3 statements into a single statement :

```
y = y + 1 ;  
z = 1 + y ;  
x = x + z ;
```

5. Why the index of array starts from 0 instead of 1?
6. Correct error, if any in the following statements :

```
char city[15]="Chennai", district[15];  
district = city;
```

7. What is the output of the following printf statement ?  
char name[25]="Anna university";  
printf("\n %s", &name[5]);
8. Write any two advantages of "function".
9. What is macro ?
10. Name any two storage classes.

**PART – B (5 × 16 = 80 Marks)**

11. i) What are the major components of a general purpose computer?  
Explain with neat block diagram. (10)
- ii) Draw a flow chart to find the roots of a quadratic equation. (6)
12. a) i) What are the basic data types in C ? For each, specify number of bytes allocated and the compatible operators, with example (8)
- ii) Explain the usage of "switch-case" statement with example (8)

(OR)

- b) i) Write a C program to search and delete a number from the given array. Show the array after deletion, otherwise display, "Not Found".  
(e.g). Delete 4 from array {10, 3, 8, 11, 4, 9, 6}  
results in {10, 3, 8, 11, 9, 6}. (8)
- ii) Write necessary statements for the following : (2+2+4 = 8)
  - (I) If  $a$  is greater than  $b$ , set  $x$  equal to -15.2, but if  $a$  is less than or equal to  $b$ , set  $x$  equal to 73.8
  - (II) If  $i$  lies between 7 & 16 inclusive and if at the same time  $j$  also lies between 5 & 14 inclusive, set  $k$  equal to  $i = j$ ; otherwise  $k$  equal to  $i - j$
  - (III) To display 1, -4, 9, -16, 25, ... -100

13. a) i) Write any four string functions and explain its usage with example. (8)

ii) What is the limitation of getting sting input using scanf("%s") ? Write any two ways to overcome it. (8)

(OR)

b) i) How values are stored in two dimensional arrays? Write a C program to find the transpose of a matrix for the given size. (8)

ii) Write a C program to store non-zero integer values into a two dimensional square matrix of given size  $n$ . Replace the right diagonal values with '0' and display original and modified matrix. (8)

E.g. The sample input values for the size 4 is given below :

(input)	1 2 3 4	(output)	1 2 3 0
	3 2 1 5		3 2 0 5
	8 3 1 2		8 0 1 2
	6 4 3 8		0 4 3 8

14. a) i) Write a function that returns the maximum of two integer values. Using this function, write a main program in C to find the maximum of  $n$  given values. (8)

ii) What is the use of *malloc()* function ? Write its usage and explain with example. (8)

(OR)

b) i) How pointers are used with arrays ? Explain separately for integer and character arrays. (8)

ii) What is the difference between increment with "++" for pointer and other variables. Explain with example. (8)

15. a) i) What is structure variable ? Why it is required ? Describe the syntax of defining structure and its usage with example. Compare structure variable with "union" variable by suitable illustration. (10)

ii) Write short note on pre-processor directives. (6)

(OR)

b) i) Write a macro definitions for the following : (8)

- define "pi" to represent the value "3.14"
- define a macro AREA, to calculate area of a circle using "pi" above and the radius  $r$  as " $\text{pi} \times r^2$ ".

ii) Define a structure date, with day, month and year as its members. Declare the tags, "dob" and "cdate" to store date of birth and current date. Write a program to find the approximate age using above declarations. (8)

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