Roll No. | | | | | | | | |

B.E . / B.Tech (Full Time) End Semester DEGREE EXAMINATIONS, APRIL / MAY 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 "pi × 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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