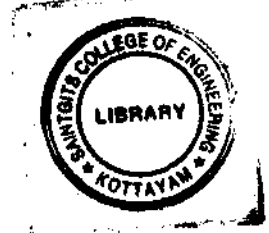# B.TECH. DEGREE EXAMINATION, MAY 2014

Fourth Semester

Branch : Electrical and Electronics Engineering

COMPUTER PROGRAMMING (E)

(Old Scheme—Prior to 2010 admissions)

[Supplementary/Mercy Chance]

Time : Three Hours   Maximum : 100 Marks

Write neat and efficient C programs wherever needed.

Part A

*Answer **all** questions.*
Each question carries 4 marks.

1. Name any *four* functions available in stdio.h and give their uses.

2. Illustrate how the minimum field width for a data item can be specified using the printf ( ) function.

3. Write an example for a "for" loop used in C.

4. What is the output of the following program ?

   ```
   main( )
   {int x = 8 ;
   while (x = = 1)
   x = x - 1;
   printf ("%d \ n", x) ;}
   ```

5. Name any *four* functions in string.h and give their uses.

6. How does C handle the values in an array internally ? Explain with an example.

7. Name any *four* I/O file functions and give their uses.

8. What are the differences between $*p + +$ and $p + +$?

9. Write a function for insertion and deletion in linked list.

10. What are the differences between macro and function ?

(10 × 4 = 40 marks)

Turn over
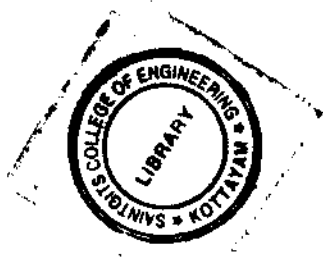
Part B

Answer **all** *questions.*
Each full question carries **12** *marks.*

11. A company pays salary to an employee at the normal hourly rate, if the number of hours worked does not exceed 40. If the number of hours worked exceeds 40, the salary for the excess number of hours is calculated as 1.5 times the normal hourly rate. Write a C program to implement this and calculate the salary.

Or

12. Write a C program that will read the value of x and evaluate the function :

    $y(x) = x^2 + 3x - 10$, if $x < 10$

    $= |x|$, if $x > 10$ using "if" statement.

    (12 marks)

13. Write a recursive function to compute the value of x^n. Also write the main program.

Or

14. Write a function which receives N × N matrix as an argument and returns the square of it to the calling program.

    (12 marks)

15. Given are two linear arrays of integers, one containing 20 elements and the other containing 15 elements. After reading data to obtain values for all items in each array, print the values of only those integers that appear in both the arrays. Write a C program to implement this.

Or

16. Write a C program to find the longest word in a given string.

    (12 marks)

17. Write a C program using pointers to copy a string to another string variable.

Or

18. Give a text file, write a C program to create another file deleting all the vowels.

    (12 marks)

19. (a) What is meant by dynamic memory allocation ? Explain how C supports dynamic memory allocation.

    (b) Explain singly linked list and doubly linked list, giving their applications.

    (6 + 6 = 12 marks)

Or

20. Write a C program that reads several different names and addresses into the computer, rearranges the names into alphabetical order, and then writes out the alphabetized list. Make use of structure variables within the program.

    (12 marks)

    [5 × 12 = 60 marks]