



Reg. No. : .....

Name : .....

**Combined First and Second Semester B.Tech. Degree  
Examination, April 2014  
(2013 Scheme)**

**13.109 : FOUNDATIONS OF COMPUTING AND PROGRAMMING IN C (FR)**

Time : 3 Hours

Max. Marks : 100



**PART – A**

Answer **all** questions. **Each** question carries **2** marks.

1. Convert the binary number  $(10101101)_2$  into its equivalent hexadecimal representation.
2. What is the use of cache memory in a computer ?
3. How is system software different from application software ?
4. Give an algorithm to print the first N Fibonacci numbers.
5. Write the general format of “for” loop and explain it.
6. What do you mean by enumerated data type ?
7. What is the difference between “break” and “Continue” statements ?
8. Differentiate between call by value and call by reference.
9. What do you mean by dynamic memory allocation ? What are its advantages ?
10. What are the different file opening modes in C ? **(10×2=20 Marks)**



## PART – B

Answer **one** question **each** from **each** Section. **Each** question carries **20** marks.

11. a) Explain about the various functional units of a computer. 10  
b) Convert the decimal number  $(735 \cdot 865)_{10}$  into its equivalent binary and hexadecimal representation. 5  
c) What is the difference between volatile and non-volatile memory? 5

OR

12. a) Convert the decimal number  $(8793)_{10}$  into its equivalent BCD format. 5  
b) How is multiplication of 2 binary numbers done? Give an example. 5  
c) What do you mean by normalization of floating point numbers? 5  
d) Convert the octal number  $(4765)_8$  into its equivalent binary and hexadecimal format. 5
13. a) Write an algorithm to check whether the given numbers is an Armstrong number or not. If the number is an Armstrong number, then reverse the number. 12  
b) What do you mean by debugging? 4  
c) What are the main functions of an operating system? 4

OR

14. a) Draw the flow chart to find the factorial of a number and then to print the sum of digits of the result. 12  
b) Write an algorithm to find the second largest element in a group of N numbers. 8
15. a) Write a C program to perform binary search on an array of N numbers. 8  
b) Write a C program to find the norm of a matrix (Norm of a matrix is the square root of the sum of squares of the elements of a matrix). 12

OR



- 16. a) Write a C program to perform bubble sort. Explain the working of this sorting procedure with the following set of elements (7, 12, 5, 4, 13, 2, 1). 12
- b) Write a C program to check whether the character entered is a vowel or not using “switch” statement. 8
- 17. a) Explain about the various storage classes in C. 8
- b) Write a C program using functions, to reverse a string and then check whether the string is palindrome or not without using inbuilt functions. 12

OR

- 18. a) What do you mean by “void” pointer ? 4
- b) Why should pointers have data types ? 4
- c) How will you declare a pointer to a function? How are functions called using a function pointer ? 4
- d) Write a C program to copy a file into another file. 8



(4×20=80 Marks)