



Reg. No. :

Name :

**Combined First and Second Semester B.Tech. Degree
Examination, December 2016
(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. What is a volatile and non-volatile memory ?
2. Write notes on ASCII code.
3. Write the bases of binary, octal, decimal and hexadecimal number systems.
4. Draw and explain the different shapes used in flowcharts.
5. What are the different types of errors in programming ?
6. Write down the storage space requirement for variables of different data types in C language.
7. What is the difference between break and exit () ?
8. List the advantage of recursive function.
9. Distinguish between stack and queue.
10. Differentiate between formatted and unformatted text files.



PART – B

Answer **any one full** question from each Module. **Each** question carries **20** marks.

Module – I

11. a) Describe the role of each functional unit of digital computer systems. **10**
- b) Perform the following operations :
- i) $(428.10BA)_{16} + (11A2.15)_{16}$
 - ii) $(1010)_2 \times (1100)_2$
 - iii) $(1011)_2 \times (1110)_2$
 - iv) $(5654)_{10} - (2334)_{10}$, using 10's complement method
 - v) $(21)_{10} - (56)_{10}$, using 2's complement method. **(5×2=10 Marks)**

OR

12. a) Explain different types of memory in a computer. **8**
- b) Perform the following conversion. **12**
- i) Convert the Decimal number 760 to Octal
 - ii) Convert the decimal number 1730 to hexadecimal
 - iii) Convert the hexadecimal number 59F to binary

Module – II

13. a) Compare and discuss the advantages and disadvantages of the following computer languages. **15**
- i) High level language
 - ii) Assembly language
 - iii) Machine language
- b) What you mean by debugging a program ? **5**

OR

14. a) What is an operating system ? List the objectives of operating system. **10**
- b) Draw a flowchart for searching for an element in an array of sorted elements. **10**



Module – III

15. a) What is enumerated data type ? Explain with a suitable example ? **10**
b) Write a C program to find the largest diagonal element of a given matrix. **10**

OR

16. a) Write a C program to find the sum of digits a given number. **10**
b) Explain binary search algorithm with an example program in C. **10**

Module – IV

17. a) Differentiate call by value and call by reference with help of an example. **10**
b) Explain recursive function with an example. **10**

OR

18. a) Explain dynamic memory allocation. **10**
b) Describe various modes of opening data files in C. **10**

