(Pages : 3) **F – 4554**

Reg. No. : .....

Name : .....

Combined First and Second Semester B.Tech.
Degree Examination, January 2019
(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. Explain the various types of ROM Memory.
2. How can 31.6875_{10} be converted into Binary ?
3. Explain the different symbols used in flowcharts.
4. What are the rules to be followed while naming variables ?
5. Determine the value of the following logical expressions if a = 5, b = 10, c = –6 :
   i) b > 15 && c < 0 || a > 0
   ii) (a/2.0 == 0.0 && b/2.0 ! = 0.0) || c < 0.0.
6. Explain the need for array variables.
7. Explain the pass by reference parameter passing technique with example.
8. Give syntax of structure.
9. Differentiate between formal arguments and actual arguments.
10. Define a pointer and discuss its concept with the help of an example.

P.T.O.

PART – B

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

Module – I

11. A) Explain the Von Neuman architecture with the help of a neat diagram. **10**

B) Perform the following operations :

i) $1F0C_{16}$ to Octal

ii) 28.9_{10} to Binary

iii) $(8764)_{10} - (4534)_{10}$, using 10's complement method

iv) $(100010)_2 \times (110)_2$

v) $(4534)_8/(7)_8$. **10**

OR

12. A) What will be the output for each of the following expression : **4**

i) –25/3% 2

ii) (5/3) * 3 + 5% 3

iii) –14% 4

iv) (5/2.0 == 0.0 && 10/2.0! = 0.0) || –6 < 0.0.

B) Discuss ASCII and EBCIDIC representation. **6**

C) Explain all the different types of memories in the hierarchy comparing their cost in terms of sizes. **10**

Module – II

13. A) Discuss the concept of top down design strategy. **4**

B) Draw a flowchart to generate series of Armstrong's Numbers between two limits. (The sum of cubes of digits of the number gives the number itself. Eg. $371 = 3^3 + 7^3 + 1^3$). **10**

C) Distinguish between Assembly level language, High level language and Machine level language. **6**

OR

14. A) Write an algorithm to generate fibonaaci series between two limits. **10**

B) What is meant by program testing and verification ? **6**

C) Explain as to how comments can help in the documentation of the programs with an example. **4**

Module – III

15. A) Define three structure objects of a structure book with three fields : title, pages and price. Write a C program to declare pointer to structure and display the contents of the structure. **6**

B) Write a C program to accept elements into a 1D array and sort the elements in descending order using bubble sort technique and display the same. **8**

C) Write a C program to find out the second largest element of an unsorted array. **6**

OR

16. A) Write a C program to read lines of text from a data file and display it on the screen. Also count the number of words in the text. **10**

B) With examples differentiate between structure and union. **10**

Module – IV

17. A) Write a C program to count the number of vowels and consonants in a given string using pointers. **6**

B) Write a program to sort the list of names, where list of name is stored as array of pointers to char. **6**

C) Write a function 'Swap' to swap the two numbers which are passed to the function using the pass by reference concept. In main, call the swap function using pointer to function concept. **8**

OR

18. A) Write a C program to implement stack using array. **10**

B) Discuss the use of command line arguments. **10**