DHARMSINHDESAIUNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
B.TECH. SEMESTER II [EC/IC/CE/IT]
SUBJECT: C PROGRAMMING - II

Examination	**: Third Sessional**	**Seat No.**	**:**
Date	**: 22/04/2015**	**Day**	**: Wednesday**
Time	**: 3:00 P.M. to 4:15 P.M.**	**Max. Marks**	**: 36**

INSTRUCTIONS:
1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Q.1 **Do as directed.**

(a) With example explain use of **ferror()** and **feof()** functions. **[2]**

(b) What is the risk involved in using 'realloc'? Specify solution to that issue. **[2]**

(c) Using dynamic memory allocation technique, develop a program for m X n matrix addition, where m and n is entered by user. **[4]**

(d) i. Specify difference between **#include "file"** and **#include <file>** **[4]**
Including "file" will look in the current directory and if it is not found there, it also checks include path directory while #include <file> only checks in include path directory
ii. Demonstrate how Compiler controller directives can be used in debugging.

Q.2 Attempt ***Any TWO*** of the following questions. **[12]**

(a) Write a program that requests for a file name and an integer, known as offset value. The program then reads the file starting from the location specified by the offset value and prints the contents on the screen. (Support Error handling during I/O operations)

(b) "recoreds.dat" file contains lne by line record of teachers. Print record of teacher for whom id is provided in the list of command line arguments. Input is expected in incremental order only. (Support Error handling during I/O operations)

Content of records.dat file	**Sample Execution Scenario:**
1 Prof.Balaguru 2345	./a.out 2 4 5
2 Prof.Galvin 345	Output:
3 Prof.Stallings 445	2 Prof.Galvin 345
4 Prof.Tenenbaum 450	4 Prof.Tenenbaum 450
5 Prof.Kanetkar 4833	5 Prof.Kanetkar 4833

(c) i. Describe purpose of getw() and putw() functions with example.
ii. Write a program to find total number of bytes in **'demo.txt'** file, without using any input/output operations.

Q.3 (a) Write a menu driven program (main) to create a singly linked list of class of students (Students details are : Rno, Name, Sem) and provide implementation of following operations: **[8]**
1. Insert details of students.
2. Update the semester for specified student (Search Key: Rno).
3. Print details of all students.

(b) In the below program, find out logical error (If any) with respect to memory allocation process. Provide solution program to achieve same functionality. **[4]**

```
#define SIZE 3
int * myFunction()
    {
intarr[SIZE]={1,2,3};
        return(arr);
    }
```

```
main()
{
int i;
int *p=myFunction();
for(i=0;i<SIZE;i++)
printf("%d",*p++);
}
```

Here, arr is local to myFunction. So in main it will not accessible and garbage value will be printed.
Solution: Using dynamic memory create space for arr and return address of it.

OR

Q.3 (a) Write a menu driven program (main) to maintain two singly linked list (ActiveLinkedList and InActiveLinkedList). Store following details for all employees: empID, name,salary,experience. Provide implementation of following operations: **[8]**
1. EmpJoined: Insert newly joined employee record in ActiveLinkedList.
2. EmpResigned: Move record of employee from ActiveLinkedList to InActiveLinkedList.

(b) Write an algorithm to delete a node from singly linked list. Explain how it takes care of all test cases. **[4]**