Examination	: Third Sessional	Seat No.	: _____
Date	: 17/04/2014	Day	: Thursday
Time	: 3:45 p.m. to 5:00 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) Match the pairs of topics appropriately based on their functionality: [2]
Topic: (structure. Union. Pointer. File.) Functionality: (Persist Data. Savings of memory if radio button like data assignment needed. Define a user defined data type for set of different elements. Imitate returning multiple arguments.)

(b) What is the purpose of const keyword in strcpy declaration (char *strcpy(char *dest, const char * src))? How [2] can we restrict update to a pointer value? Explain with example how this kind of restriction is helpful.

(c) How can we achieve random access to files? Explain with example program of displaying file contents in [2] reverse order.

(d) Find syntax errors if any and correct it with explanation: [2]

```
(I) void main() {                    (II) void main() {
    struct student s.id=10;              union unit u={'a',10,20.20};
}                                    }
```

(e) Find runtime errors if any and discuss the coding standard approach with solution: [2]

```
(I) void main() {                    (II) void main() {
    int *ptr, data=20;                   int *a[5];
    printf("%d",*ptr);                   scanf("%d%d%d%d%d",&a[0],&a[1],&a[2],&a[3],&a[4]);
}                                    }
```

(f) Display output of following code snippet in different test scenario. Anything logically missing/inappropriate? [2]

```
(I) void main() {                    (II) void main() {
    FILE *pf=fopen("steps","r");         FILE *fp=fopen("tasks","r");
    if(pf)                               char data;
        printf("It feels butterflies.");  while( (data=getc(fp)) != EOF );
    else                                 printf("Size of file is %d", ftell(fp));
        printf("Graceful way of coding."); }
}
```

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

(a) Explain following terms: Relationship between arrays and pointers; Passing structure as an argument; [6] Formatted I/O with text files.

(b) Explain following terms: void pointer; Pointer to structure; Closing a file. [6]

(c) What is command line argument? How is it handled in C Programming? Explain with a sample program and [6] data structure diagram.

Q.3 (a) Develop following user defined function and write a driver program to test it. **Use of pointers is must. Do not** [6] **use any inbuilt string library functions.** "strindex(source,part), which returns leftmost index of the string part in string source, -1 (negative one) if none."

(b) Develop a program to read id, name and marks of three subjects for 10 students and process data of students [6] for their individual total marks. Also, process and display individual subject totals and grand total of all three subjects. Display students with their id, name and total marks.

OR

Q.3 (a) Develop following user defined function and write a driver program to test it. **Use of pointers is must. Do not** [6] **use any inbuilt string library functions.** "strend(source,tail), which returns 1 if the string tail occurs at the end of string source and 0 (zero) otherwise."

(b) A file named DATA contains a series of integer numbers (binary). Develop a program to read these numbers [6] and then write all 'odd' numbers to a file to be called ODD and all 'even' to another file to be called EVEN. Finally, list content of EVEN file followed by content of ODD file.

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