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| Examination | : Third Sessional | Seat No. | : _____ |
| Date | : 17/04/2013 | Day | : Wednesday |
| Time | : 03:00 to 4:15 | Max. Marks | : 36 |

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**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.

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**Q.1 Answer the Following :** **[12]**

**(A)** What is an array of pointers? How is it different from pointer to an array? **[2]**

**(B)** Structure declaration reserves memory for the structure. Comment on this statement with valid justification. **[2]**

**(C)** State True or False with proper reason. **[2]**
  (i) Ragged arrays consumes less memory space.
  (ii) It is mandatory to close all the files before exiting the program.

**(D)** Give the output of the following code: **[2]**
```
void main()
{ char c;
  FILE *fp=fopen("abc.txt","w");
  for(c=' A ';c<=' I ';c++)
    { putc(c,fp); }
  fclose(fp);
  fp=fopen("abc.txt","r");
  fseek(fp,5,0);
  fseek(fp,-3,1);
  printf("%c",getc(fp)); }
```

**(E)** Find the errors if any correct it and write the output of the following code. **[4]**
```
(1) #include<stdio.h>              (2) #include<stdio.h>
struct one                            void main()
{ union                               {
  {  int i;                           int a[2][2][2]={1,2,3,4,5,6,7,8};
     int j;                           int *p,*q;
  }a; } b={10,5};                      p=&a[1][1][1];
void main()                           q=a;
{ printf("%d", b.i - b.j); }          printf("%d %d",*p,*q); }
```

**Q.2 Answer the following. (Any three)** **[12]**

**(A)** WAP to copy "University" from the given string "Dharmsinh Desai University" using Pointers. **[4]**

**(B)** WAP to count the total number of vowels(a, e, i, o, u) in a file **"database.txt"**. **[4]**

**(C)** WAP to define a Union and a Structure both having exactly the same members. Using the sizeof operator , print the size of structure variable as well as union variable and comment on the result. **[4]**

**(D)** WAP to find and display addition of two 3X3 matrix using pointer. **[4]**

**Q.3 Answer the following:** **[12]**

**(A)** Define a structure Height which contains two data members Feet and Inch. Write a program to read, display, add and subtract two Heights. Use functions to add and subtract the Heights which contains structure as an argument to it. **[6]**

**(B)** WAP to read a file which contains some character data. Copy the data of this file to another file with all lower case characters converted into uppercase.(use Command Line Argument to take the file names). **[6]**

**OR**

**Q.3 Answer the following:** **[12]**

**(A)** Define a structure Time which contains three data members Hour, Minute and Seconds. Write a program to read, display, add and subtract two Times. Use functions to add and subtract the Times which contains structure as an argument to it. **[6]**

**(B)** WAP to write record of 5 students to a FILE **"student_detail.txt"** using array of structure. Structure student contains three data members students name, id and percentage marks. First scan all data in an array then write it to a file. **[6]**